OCTOBER, 1954

Industrial FINISHING

Published monthly in the interest of Product Cleaning and Finishing by Rowfant Publications, Inc., 1143 N. Meridian Street, Indianapolis 4, Ind.

A Safe Sign to Follow

AT RELIANCE, a thorough analysis of all factors involved in any finishing problem is a prerequisite to the formulation of the proper materials to be used. Reliance manufactures "tailor-made" Stains, Fillers, Lacquers, Varnishes, Primers, Undercoats, Enamels and Special Coatings for every known surface, to be applied by spraying, dipping, flowing, roller coating — air dried or baked. May we have the pleasure of serving you?

RELIANCE VARNISH COMPANY

Incorporated

Affiliated Factories in
LOUISVILLE, KY.
EVANSVILLE, IND. BRIDGEPORT, CONN. CHICAGO, ILL. LOS ANGELES, CALIF.

Magical transformations are a daily routine for users of

IC® COMPOSITION BOARD FINISHES

Using Interchemical primer-surfacers and top coats you can transform a sheet of synthetic hardboard into gleaming white or pastel bathroom tile-board, door or wall paneling, house siding or a hundred other things.

Using Interchemical POLYFAX reproductions you can build low-cost furniture, television and radio cabinets that are fitting companion pieces for the finest mahogany, walnut or limed oak. You can manufacture table and sink tops for kitchens and bathrooms in attractive reproductions of marble, mother-of-pearl, fabric or geometric designs. For the den or playroom you can choose a reproduction of leather or knotty-pine.

For further details on this finishing magic,

Call Your Nearest IC Finishes Specialist.

Interchemical Corporation

Finishes Division

FACTORIES: CHICAGO, ILL. • CINCINNATI, OHIO • ELIZABETH, N. J.
LOS ANGELES, CAL. • NEWARK, N. J. • MEXICO CITY, MEX.

In Canada, IC products are sold by AULCRAFT PAINTS LTD., Toronto, Ont., under its trademarks.

NEW!

NCP

NCP Water White Lacquer #51 *PROVES* Amazing Color Retention In Actual Tests!

We took two raw wood panels and applied a white undercoat. We coated the first panel completely with another leading Water White Lacquer, the second completely with NCP Water White Lacquer #51. We placed both panels in the sunlight; the top half of each panel was covered with aluminum foil to prevent exposure to light, leaving the bottom half open to exposure. Here's what happened:

This half coated with other leading Water White lacquer and not exposed to light.

This half coated with other leading Water White lacquer and EXPOSED to direct sunlight. **Yellow discoloration occurs.**

This half coated with NCP Water White Lacquer #51 and not exposed to light.

This half coated with NCP Water White Lacquer #51 and EXPOSED to Direct Sunlight. **COLOR RETAINED.**

PROOF! Where New NCP Water White Lacquer #51 is used, Original color is retained; the quality of your product is assured.

To ASSURE MAXIMUM COLOR RETENTION Use NCP Water White Lacquer #51

The National Chemical & Plastics Co.
1422 Philpot Street Baltimore 31, Md.

Write For Details of new improved NCP Water White Lacquer #51.

Specially formulated finishes

help the Rapids Standard Company "keep 'em rolling"

This Rapistan Floor-Veyor, Jr. takes a real beating in daily use at busy Northland Center. Like all Rapistan products, it makes use of specially formulated finishes that are unusually protective and long lasting . . . finishes that compliment the quality of the products they beautify.

The Better the Finish, the Better the Buy

GRAND RAPIDS VARNISH CORPORATION

MAKERS OF THE FAMOUS Guardsman® *FINISH AND* Guardsman® *CLEANING POLISH*

GRAND RAPIDS, MICHIGAN

OCTOBER, 1954
Vol. XXX, No. 12

BPA

A monthly magazine for company executives, production superintendents, process engineers, chemists, purchasing agents, paint shop and finishing department foremen of industrial plants where product surface cleaning and painting are major operations in the manufacture of parts and products of all kinds.

Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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30 THIRTIETH YEAR OF PUBLICATION

Metal Fires. The increasing use of magnesium, sodium and other highly reactive metals in industrial processes and research is posing a problem in fighting metal fires.

For instance, if water is sprayed or poured on burning magnesium, it has an explosive effect. For such fires, a dry powder extinguisher is recommended. By actual test on burning magnesium turnings produced by machining magnesium castings, the Ansul Met-L-X dry powder extinguished the fire in two minutes, five seconds without rekindling.

Extinguishers containing this powder are a vivid yellow to identify them from other extinguishers around the plant.

* * *

Metal Furniture Fasteners. Those protruding bolt and rivet heads in tubular metal furniture can now be eliminated. R. C. Singleton recently patented special welded studs and spring clips which enable manufacturers to produce tubular metal furniture without exposed fasteners.

* * *

How to Meet Competition. Are you showing a profit in the face of today's stiff competition? If not, you may find out what to do about it at the manufacturing conference to be held Oct. 11-13 in New York by the American Management Ass'n. Main theme of the conference will be *how to meet the buyer's market successfully.* Officials of leading manufacturers will tell how their companies turned the trick by developing new products and markets, by refining old processes and tightening efficiency.

Other subjects up for discussion include what management expects of

New streamlined equipment of undeniable beauty and utility was recently introduced in Los Angeles by Sharpe Mfg. Co. TV Actress Joyce Johnson demonstrates the compactness of new Sharpe Bearcat compressor, together with their new combination spray gun.

Dolan's 35% HI-SOLIDS LACQUER

. . . sprays right from the drum: requires no thinning or heating. 35% solids in a single application.

OUTSTANDING!!

. . . Because it can be sprayed without the addition of thinners or the necessity of pre-heating to bring down to spraying viscosity, Dolan's 35% Hi-Solids Lacquer gives an improved finish at greatly reduced cost. It is unusually tough, with exceptional cold check resistance. Very light in color. Fits into any finishing schedule. A demonstration will prove convincing. Write us for 5 gallons at drum price!

"From the start consider the Finish"

V. J. DOLAN & COMPANY, Inc.

Manufacturers of "Unquestionable Quality"

INDUSTRIAL FINISHES

1830 N. Laramie Ave. Chicago 39, Ill.

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Two Famous Stripers
The Bass and the Beugler

"The Bass for Beauty —
The **BEUGLER**
for creating beauty"

The professional's and layman's choice for over 20 years. 2000 dealers to serve you. Decoration is your best salesman — cost is negligible. Identification of materials saves errors and waste. When buying a striper, buy the best — a Beugler.

STRIPE FOR DECORATION OR IDENTIFICATION

THREE MODELS — Fourteen standard size stripes from which to choose. 1/32 to 1/4 inch. Also many special stripes, concave, convex and double stripes.

Craftsman model **$5.75**
2 size stripes
Single guide holder

Deluxe model **$8.95**
3 size stripes
Double guide holder

Jumbo model **$12.95**
2 size stripes
Double guide holder

Your paint store or auto parts house can supply Beugler products. If no dealer near you, send your order direct or write for literature and information.

BEUGLER *manufacturing co.*
4312 W. SECOND STREET, LOS ANGELES 4, CALIFORNIA

the factory, management of the engineering function, labor relations, inventory reduction, quality control, and coordination of manufacturing and warehousing with traffic and transportation. Non-members are welcome. Details are available from the Association at 330 W. 42nd St., New York 36, N. Y.

* * *

Predicts Performance. An electronic testing system that will permit engineers to estimate the effect of the addition of new equipment to an industrial operation without actually test-installing such equipment, was recently unveiled to the engineering profession at the First International Instrument Congress & Exposition in Philadelphia.

Developed by the Minneapolis-Honeywell Regulator Co.'s Industrial Division, the new system, known as a servo analyzer, automatically translates behavior characteristics of equipment to a chart record. This, in turn, is analyzed to determine how such a component will affect the over-all behavior of the operation. The new system can save 30% to 60% of the research time involved in re-designing a process. It was initially developed by the engineers to meet their own needs for faster methods of equipment analysis, but it is now being made available to industry.

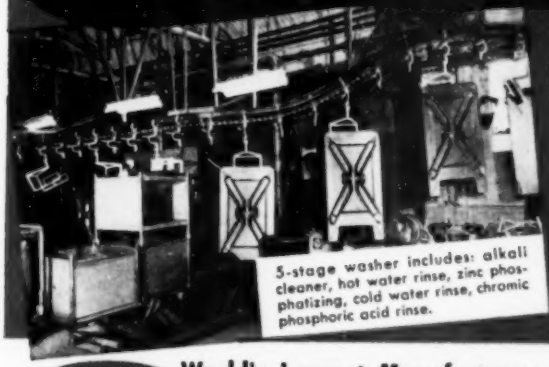
* * *

Protective Coat For Metal. Peel-Kote (type M C) is the name of a strippable plastic coating which protects bright metal surfaces from scratches and die marks.

This clear coating has a high percentage of elongation, and is not damaged by shallow drawing. It has high adhesion properties which provide a positive bond to the metal, yet it can be easily stripped off when desired.

(Continued on page 125)

PRODUCTION INCREASED 150% with DESPATCH FINISHING SYSTEM



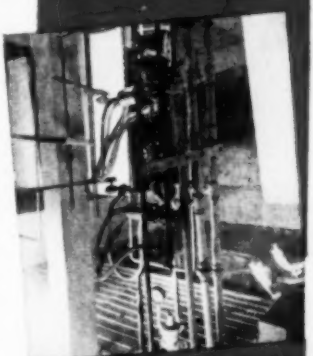
5-stage washer includes: alkali cleaner, hot water rinse, zinc phosphatizing, cold water rinse, chromic phosphoric acid rinse.

Amana

World's Largest Manufacturer of Food Freezers Expands

As part of a major expansion program Amana Refrigeration, Inc., Amana, Iowa, installed a DESPATCH 2-coat, 2-bake electrostatic paint finishing system with a capacity of 400 freezers and 200 room air conditioners on an 8-hour shift. The new streamlined system is credited with increasing Amana's production by 150%, has greatly improved finish quality and has achieved substantial paint savings through more efficient paint application and paint reclamation processes.

Ware travels on a 2700-foot continuous conveyor through 5-stage washer, dry-off oven, prime and finish staggered electrostatic spray booths, prime and finish touch up booths, prime and finish multiple pass bake ovens and inspection area to three assembly lines.



A COMPLETE SYSTEM OR A SINGLE UNIT

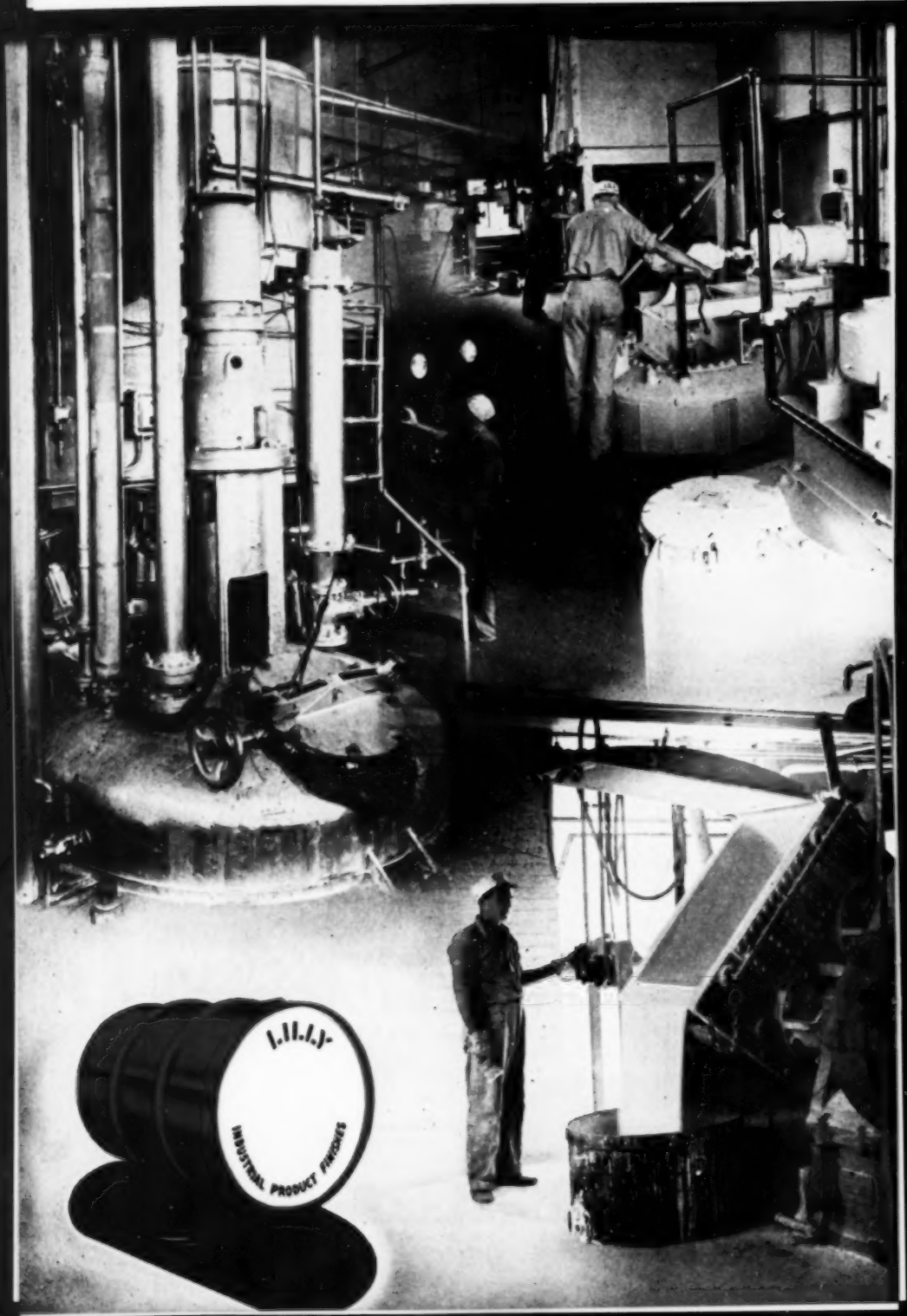
Despatch Finishing Systems are designed and built to finish your product better, faster and more economically. You can get a complete system or an individual unit. Write, Wire or Call Dept. E for details.

DESPATCH OVEN COMPANY

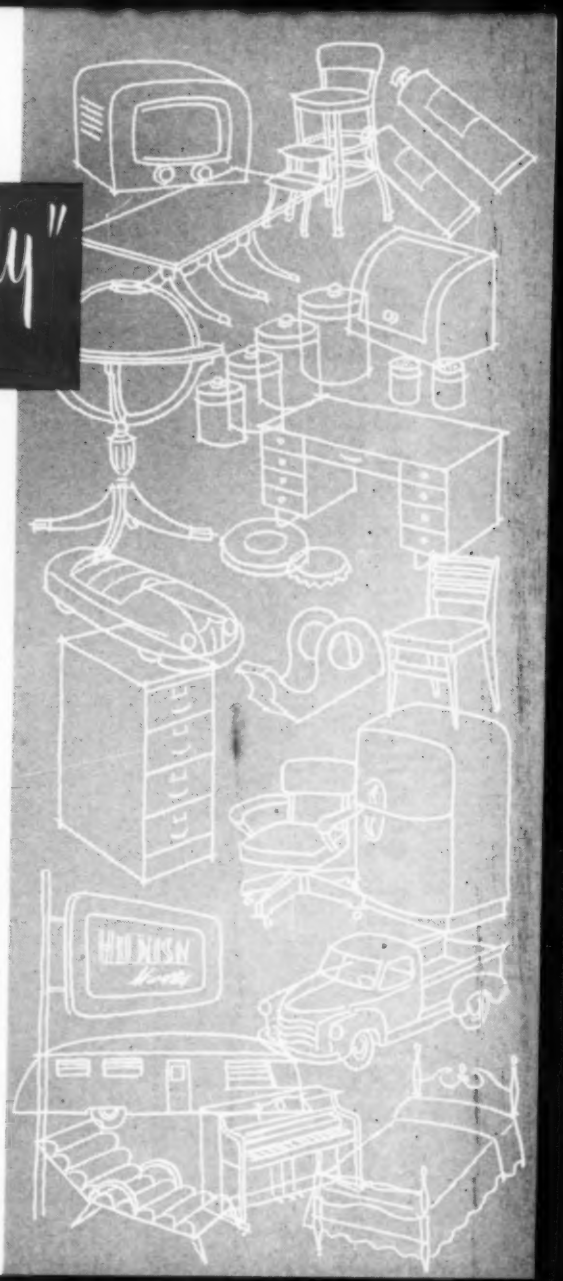
Minneapolis Office: 619 S.E. 8th St. Chicago Office: 4834 N. Broadway

Sales and Service in all Principal Cities

PIONEERS IN ENGINEERING HEAT APPLICATIONS FOR INDUSTRY


I.I.I.I.
INDUSTRIAL PRODUCT FINISHES

"Coatings by Lilly"



Coatings by Lilly is your assurance of high quality INDUSTRIAL PRODUCT FINISHES . . . always.

The three Lilly plants—in Indianapolis, Indiana, High Point, North Carolina and Gardner, Massachusetts—are devoted exclusively to the formulation, design and production of high quality INDUSTRIAL PRODUCT FINISHES.

Our ability to meet the varied requirements of industry is reflected in the long list of satisfied customers who rely upon the uniform high quality of Lilly products: VARNISHES . . . LACQUERS . . . ENAMELS . . . METAL LITHO COATINGS . . . STAINS and WOOD FILLERS.

If you have a finishing problem, look to LILLY for the answer. Ask about our complete technical and finishing service which is designed to help manufacturers with their individual requirements.

Serving Industry Since 1865

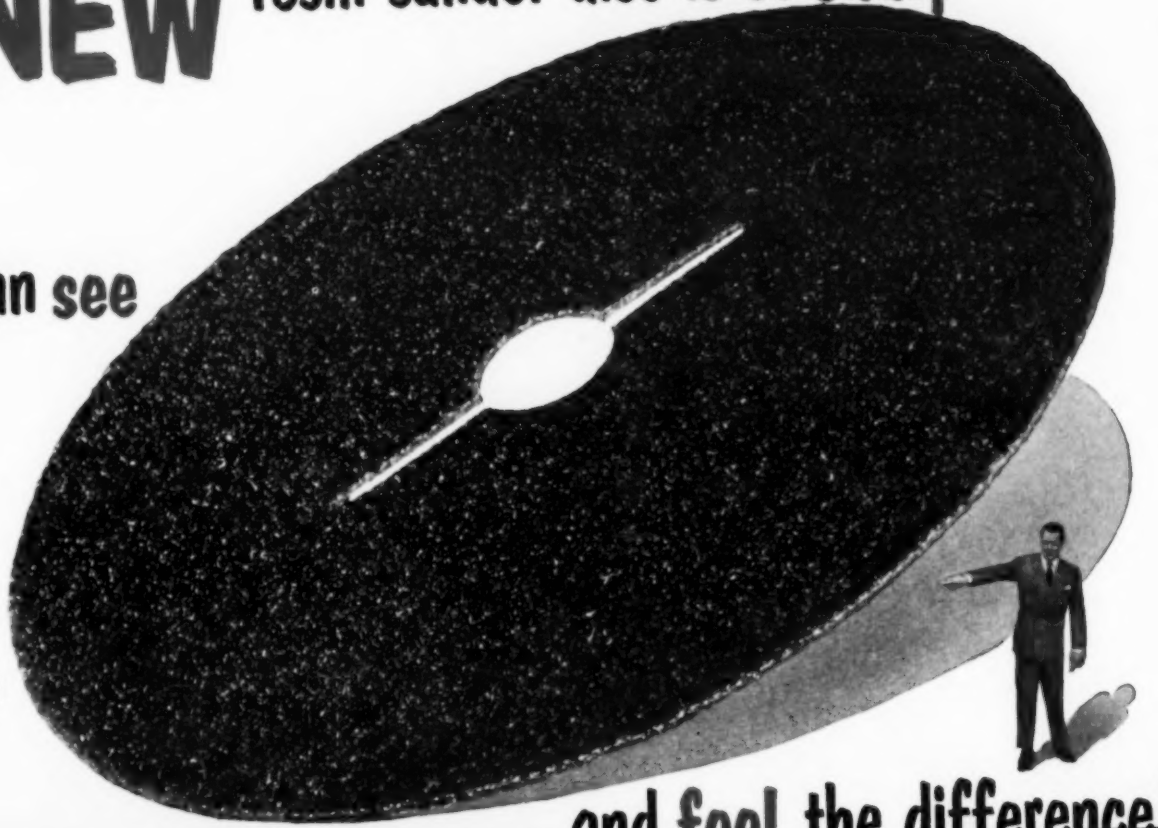
LILLY VARNISH COMPANY
666 S. CALIFORNIA STREET
INDIANAPOLIS, INDIANA

Serving industry with all types of product finishes and coatings:
VARNISHES • LACQUERS • ENAMELS
METAL LITHO COATINGS • STAIN and WOOD FILLERS

All three companies at High Point, North Carolina and Gardner, Massachusetts

This **NEW** resin sander disc is so sharp

you can see



and feel the difference!

You never saw a sander disc that *looks* so sharp... *feels* so sharp... *cuts* so fast, free and cool. It's the all-new Resin Sander Disc by CARBORUNDUM.

Test it on the toughest sanding job in your shop. See how it beats any other disc — for cutting ability, long life, uniformity. Notice how the edge holds its shape longer, and how the abrasive grain stands up under the most severe grinding conditions. And you'll find it *stays* uniformly sharp, from start to finish.

WHAT'S NEW IN THESE DISCS? EVERYTHING:

The abrasive grain is an improved type; the resin bond is engineered to provide more holding power; a new and tougher fiber is used in the backing. And rigid new manufacturing controls assure highest uniformity from disc to disc, from order to order... to give you truly dependable performance.

Sander Discs by CARBORUNDUM come to you in moisture-resistant boxes to keep them "factory-fresh" and to make handling and storage easier.

FOR A FREE DEMONSTRATION... call your CARBORUNDUM Distributor or Salesman, listed in the yellow pages under "Abrasives" or "Grinding Wheels." Or write The Carborundum Company, Dept. IF 82-417, Niagara Falls, New York.

CARBORUNDUM

REGISTERED TRADE MARK

...continually putting more SENSE in your abrasive DOLLAR

82-417

Sell Lighting, not fixtures, with Pacific's SYNTHEX-HR

CUSTOMERS buy lighting, not fixtures. That's why fluorescent fixtures finished with Pacific Paint & Varnish Co.'s SYNTHEX *High Reflectance Enamels were selected for the new CONVAIR Missile Plant in Los Angeles. Thirty-three miles of Luminaires in this plant are GIVING over 85% light reflectivity at the work level.

SYNTHEX High Reflectance Enamels are a combination of special resins of our own manufacture with suitable pigments to produce the highest coefficient of reflectivity with excellent color retention under heat conditions. If high reflectance and color retention will help SELL your product, contact the nearest NATIONAL AFFILIATE.

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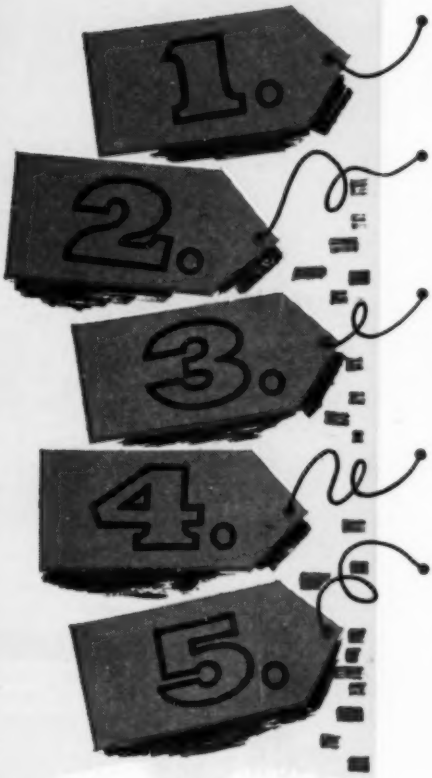
Pacific PAINT & VARNISH CO.

Fourth & Cedar Streets • Berkeley, California

NATIONAL AFFILIATES NAFTEK INDUSTRIAL FINISHES

Do your present lacquer solvents meet these Ketone advantages...?



High purity . . . *at no extra cost.* You add the latent solvents *you* prefer.

Unsurpassed ease of formulation—for both nitrocellulose and vinyl types.

Gives solutions of exceptionally high solids content—or high diluent content, both aromatic and aliphatic.

Imparts excellent flow, blush resistance, high gloss.

Price advantage, too! Lower specific gravity favors *you* when you buy by the pound and sell by the gallon.

WRITE FOR THE COMPLETE STORY!

These five important advantages are yours when you use Shell Ketones. Lacquer solvent systems based on Ketones have so many inherent advantages they have become standard with the nation's foremost formulators of both nitrocellulose and vinyl lacquers.

The Shell "quality group" of solvents includes MEK, MIBK, MIBC and IPA . . . for maximum flexibility in formulating. Ask your Shell Chemical representative why Ketones are your best solvent buy.

SHELL CHEMICAL CORPORATION

CHEMICAL PARTNER OF INDUSTRY AND AGRICULTURE

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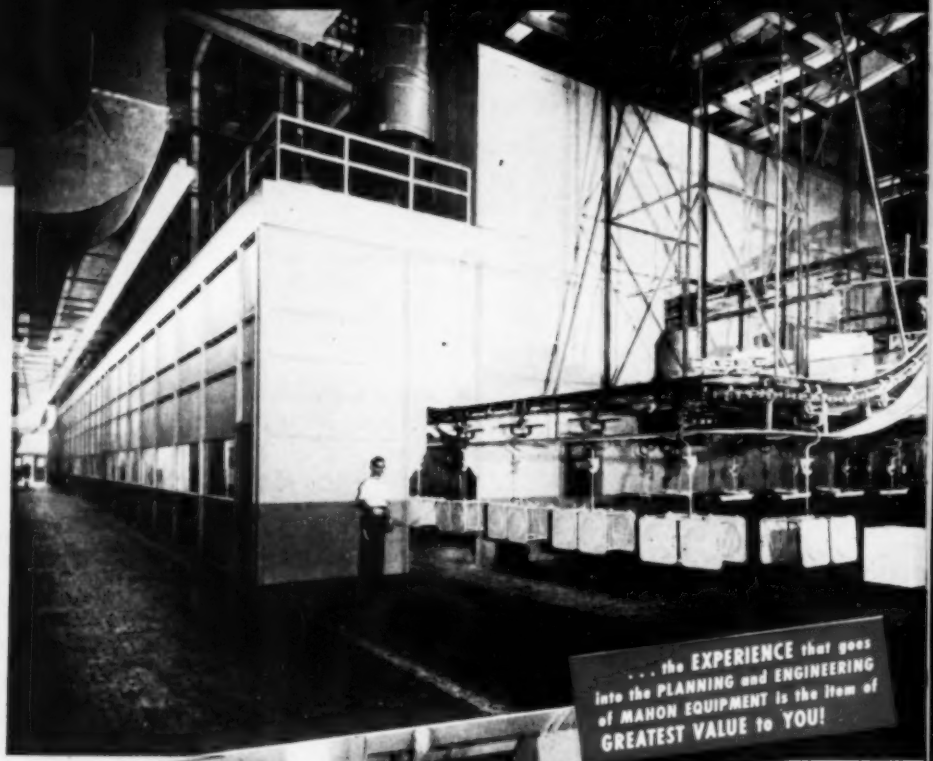
Atlanta • Boston • Chicago • Cleveland • Detroit • Houston • Los Angeles • Newark • New York • San Francisco • St. Louis

IN CANADA: Chemical Division, Shell Oil Company of Canada, Limited • Montreal • Toronto • Vancouver

COMPLET



. . . the EXPERIENCE that goes into the PLANNING and ENGINEERING of MAHON EQUIPMENT is the item of GREATEST VALUE to YOU!

From right above, you see the interior of a Mahon Hydro-Filter Spray Booth. Next, the interior of a Mahon Automatic Electrostatic Spray Booth. Directly above is a view showing exterior housing which encloses the Complete Mahon Finishing System. Major processing units in this system are: Two Metal Cleaning and Rust Proofing Machines, two Dry-Off Ovens, two Flow Coating Machines, two conventional Hydro-Filter Spray Booths, one Electrostatic Spray Booth, two Finish Baking Ovens, a Filtered Air Supply System, Stripping Equipment, and paint Storage and Circulating Facilities.

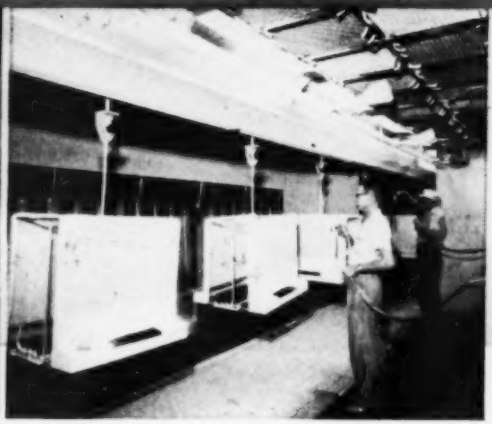
Directly above you see the two Mahon Metal Cleaning and Rust Proofing Machines in the General Electric installation. One of these is a Seven-Stage machine for processing white parts. The other is a Six-Stage machine for black parts.

M

E

Finishing SYSTEMS

. . . for ENAMELS • LACQUER • PAINT • VARNISH



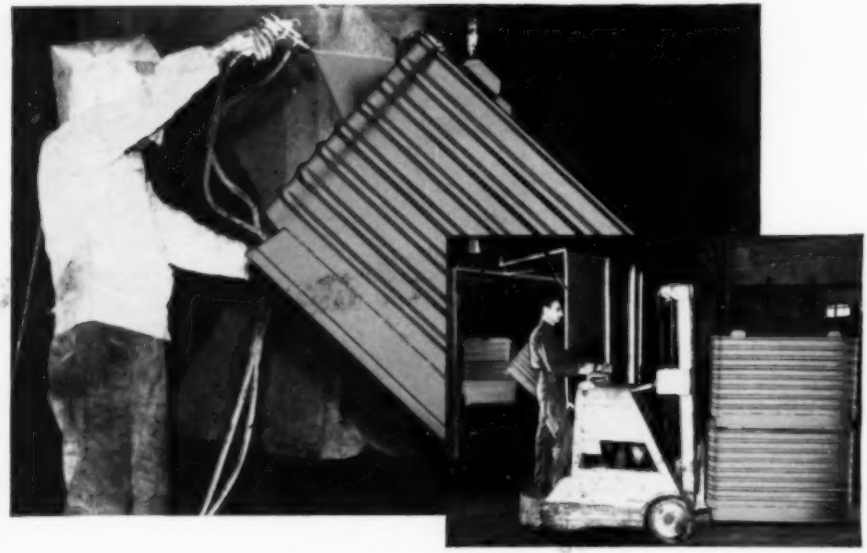
More and More HOME APPLIANCES Receive Their FINE FINISH in Modern, COMPLETE MAHON FINISHING SYSTEMS!

In the Home Laundry Equipment Department of General Electric Company, Louisville, Kentucky, a Complete Mahon Finishing System produces the fine finish demanded by one of the world's largest home appliance manufacturers. The system includes an enclosure, which houses all metal processing and painting equipment, with Finish Baking Ovens, Heating Units, Filtered Air Supply and Exhaust Fans located above . . . it is a complete, ultra-modern finishing system combining and coordinating all major units of equipment and other essential facilities into an efficient, smooth-running, economical production operation. There are actually three finishing lines in this system: One is a flow coating line for black parts. Another flow coating line applies the first coat of enamel—both Flow Coaters are equipped with controlled atmospheric paint surface conditioning chambers in the drip zone. The third line is a combination manual and automatic electrostatic spray for the finish coat of enamel. If you are contemplating new finishing equipment, you, like thousands of other quality-minded manufacturers, will find that Mahon engineers are better qualified to advise you on both methods and equipment requirements . . . and better qualified to do the all-important planning, coordinating and engineering of equipment—which is the key to fine finishes at minimum cost. You will find also, that Mahon equipment is built better for more economical operation over a longer period of time. Mahon will furnish your complete system on one contract . . . undivided responsibility for the entire job safeguards you against complications which may upset your production plans and subsequent schedules. See Sweet's Plant Engineering File, or write for Mahon Catalog A-655.

THE R. C. MAHON COMPANY • Detroit 34, Michigan • Chicago 4, Illinois

Engineers and Manufacturers of Metal Cleaning and Pickling Equipment, Metal Cleaning and Rust Proofing Equipment, Spray Booths, Flow and Dip Coaters, Drying and Baking Ovens, and Complete Conveyorized Finishing Systems.

AHON



NOW... *sprayed... air-dried... loaded*
in MINUTES instead of HOURS!

Fast-drying Sherwin-Williams Finish helps solve storage space problem

Long air-drying time caused a storage space problem for Powell Pressed Steel Co., Hubbard, Ohio. A fast, practical answer was found by close teamwork with Sherwin-Williams Industrial Finish Specialists. The new, faster drying finish developed met Powell's requirements for resistance to exterior exposure, machine oils and general rough usage.

Tested and adopted, the new finish solves the problem of storing bulky steel tote boxes after finishing . . . permits loading almost directly, after spraying, into railroad cars for shipment. Where drying formerly required 4 to 8 hours, boxes now are loaded after as short a period as 4 to 8 *minutes* after spraying!

Industry-wide experience in product finishes enables Sherwin-Williams to offer similar help on many related problems of engineering, production or sales. Investigate—without obligation—today! Write: The Sherwin-Williams Co., Industrial Div., Cleveland 1, Ohio.

SHERWIN-WILLIAMS
INDUSTRIAL FINISHES

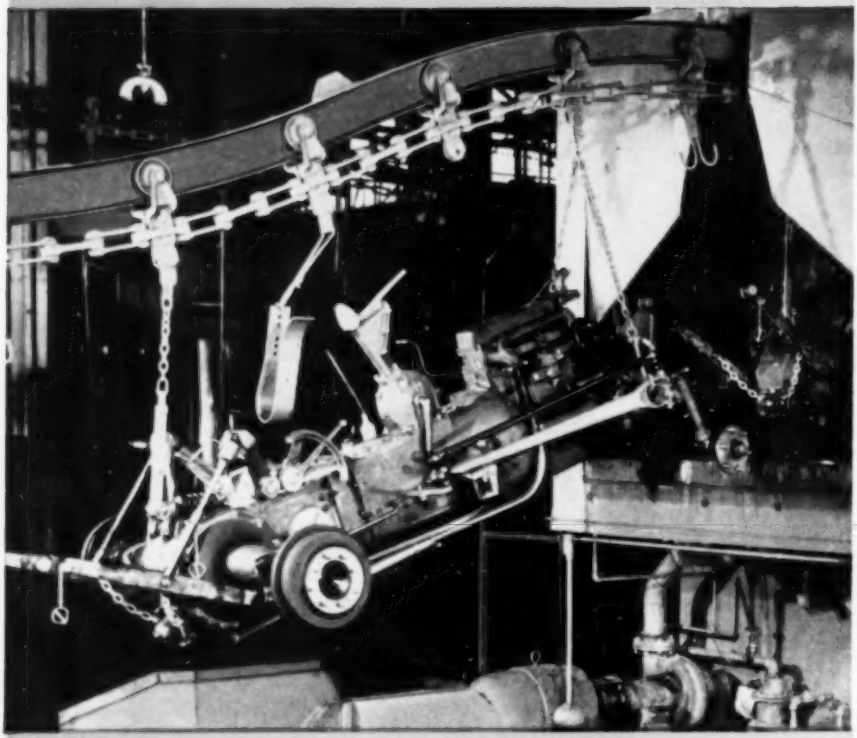
RELATED finishing materials from ONE dependable source!

Many finishing "headaches" that can't be traced to any one material or supplier result from using materials from different sources, in the same system. New ingredients today make it more important than ever to be sure that all materials are completely compatible *and will stay compatible.*

Surest way to avoid such problems is to use *related* finishing materials for the *whole* system, from *one* dependable source. From stain to final coat, Sherwin-Williams Furniture Finishes provide all the materials needed in any system. No question how filler, sealer and top-coats will react with aging and exposure. Relationships are known . . . results assured. And you can also benefit from Sherwin-Williams background and leadership in color. It's well worth checking when styling your line in pace with latest color trends. Contact your S-W Industrial Representative today for recommendations. Call, wire or write: The Sherwin-Williams Co., Gen. Industrial Div., Cleveland, Ohio.

SHERWIN-WILLIAMS INDUSTRIAL FINISHES

Special PITTSBURGH



View of Ferguson Tractor assembly line, showing chassis entering two-stage washing machine. Heat retained by the metal surfaces from this washing and drying assists in drying the paint film, which is applied later.

PPG

PITTSBURGH

PAINTS • GLASS • CHEMICALS • BRUSHES

PITTSBURGH PLATE GLASS

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

Protective Finishes
Contribute to Durability of
FERGUSON FARM TRACTORS

PROBABLY NO OTHER piece of equipment is subjected to such a wide variety of conditions as a farm tractor. It must withstand every kind of weather. It must resist the corrosive effects of fertilizers, manure and spraying compounds. When not in use, it is quite likely to be left out of doors, as many farmers do not have adequate storage facilities.

Protective finishes used on this type of equipment *must* be extra tough and durable.

That is why Pittsburgh is especially proud that its long-lasting enamels are used on the tractors produced by Harry Ferguson, Inc., one of the country's foremost builders of farm tractors.

To meet the unusual requirements, Pittsburgh prepares a special Tractor Gray Enamel that is being used on the tractor chassis and all detail parts with uniform success and satisfaction.

PITTSBURGH PLATE GLASS CO., Industrial Paint Div., Pittsburgh, Pa. Factories: Milwaukee, Wis.; Newark, N.J.; Springdale, Pa.; Atlanta, Ga.; Houston, Texas; Torrance, Calif.; Portland, Ore. Ditzler Color Div., Detroit, Michigan. Thresher Paint & Varnish Division, Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Div., Pittsburgh, Pa.

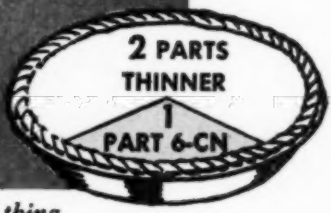
FREE ADVISORY SERVICE—Pittsburgh's broad experience in serving many fields may be helpful in solving *your* finishing problems. Wire, write or phone the Pittsburgh Paint plant nearest you. We'll be glad to have one of our engineers discuss your requirements with you, without cost or obligation.

PAINTS
PLASTICS • FIBER GLASS
COMPANY

EGYPTIAN 6-CN

Still

MOST ECONOMICAL QUALITY METAL FINISH



Application-wise Egyptian 6-CN is the nearest thing to the proverbial pie you can eat and have too!

EGYPTIAN IMPROVED, TIME-TESTED FORMULA NOW GIVES YOU ALL 10 DESIRABLE METAL FINISHING CHARACTERISTICS

- Economical Application—thin 1 part Clear to 2 parts thinner.
- Improved to Minimize Orangepeel.
- Fast Air Dry—10 to 15 minutes at room temperature.
- Excellent Adhesion to clean metal.
- Ease of Application—spray or dip without special solvents.
- Exceptionally Light Color Film.
- Dries to a Glossy, Tough, Flexible Film.
- Film Properties Improve with Age.
- Good Resistance to Perspiration.
- 6-CN can be baked 15 to 20 minutes at temperatures to 250°F improving adhesion, toughness and perspiration resistance.

Egyptian 6-CN is trimming metal finishing costs for thousands of product manufacturers everywhere. If your problem is *Finishing Room Economy*, at no sacrifice to *Quality* . . . call an Egyptian Industrial Finishes Specialist in to-day! No obligation of course.

EGYPTIAN *Industrial Finishes*

The EGYPTIAN LACQUER MANUFACTURING COMPANY

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EXECUTIVE OFFICES, ROCKEFELLER CENTER, N. Y. • Plants: South Kearny, N. J.—Lafayette, Ind.

Production is increased and quality of the work is improved over former hand spray method

● When General Electric formerly hand sprayed their home laundry equipment—automatic washers and dryers—they painted 9.74 washers with a gallon of paint. Now, in the new and modern plant at Appliance Park, Louisville—where they're using the Ransburg No. 2 Process—they get 17.97 units per gallon of paint. An increase of 84%!

And, where they formerly got 5.49 dryers per mixed gallon of finish, now—with the Ransburg No. 2 Electrostatic Spray Process—they get 9.56 dryers per gallon of paint. An increase of 74%!

Along with increased production, G.E. is getting a more uniform, higher quality finish. Another typical, on-the-job-example of the unmatched efficiencies of the Ransburg No. 2 Process of electrostatic spray painting!

Want to know what Ransburg Electrostatic Processes can do for you in your finishing department? Ask about the complete facilities for test-painting YOUR products—under simulated production conditions—in Ransburg laboratories.

Ransburg ELECTRO-COATING CORP.
Indianapolis 7, Indiana

RANSBURG

Zatex®

multi-color finishes

The newest, the most practical, the best looking finish in years*. ZATEX! Combinations of two or three or more colors in *one* material in *one* application. ZATEX! Soft blends to terrazzo to leatherette textures. ZATEX! Thirty-eight stock blends to fit *your* requirements.

Write today for technical data on the one, the only **Zatex!**

*Patented

ATLAS POWDER COMPANY

Wilmington 99, Delaware

for Industrial Finishes

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Now more than ever

PLANT ENGINEERS PREFER

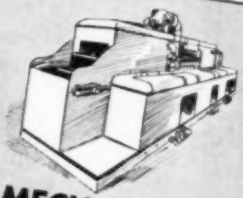
Schmieg CENTRI MERGE INDUSTRIAL EQUIPMENT for

- ✓ Long, Trouble-free Performance
- ✓ Low Maintenance Costs
- ✓ Ease of Installation
- ✓ Space-saving Economy

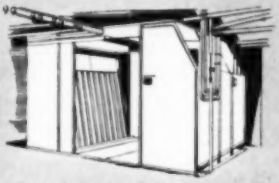
GET THE FACTS about SCHMIEG Equipment Before you Decide:

DUST and FUME ELIMINATORS

INDUSTRIAL OVENS



MECHANICAL WASHERS



SPRAY BOOTHS

All SCHMIEG equipment is designed, engineered, manufactured, and installed with the fundamental objective of protecting and improving the quality of the product you manufacture.

CONSULT SCHMIEG ENGINEERS and find out how a SCHMIEG installation will keep your plant operating at highest efficiency levels at lowest possible cost.

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Schmieg INDUSTRIES INC.

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ANNOUNCING . . .

a new LOW COST water wash spray booth by Binks

Check these 9 money-saving features:

1. **Fan stays cleaner longer.** Virtually all pigment is removed from exhaust air.
2. **Easy access.** Fan and arrestor plates are reached through doors in back of booth. When booth is installed against a wall, access doors are placed in front and lower section of water curtain is easily removed.
3. **No moisture reaches stacks.** Staggered metal arrestor plates trap moisture entrained in the exhaust air.
4. **Unbroken water curtain.** Binks special clog-proof Dynaprecipator manifold distributes water uniformly.
5. **Double washing.** Paint fumes and overspray must pass through 2 washings before they leave the booth.
6. **Stays clean longer.** The water curtain is constantly flushed.

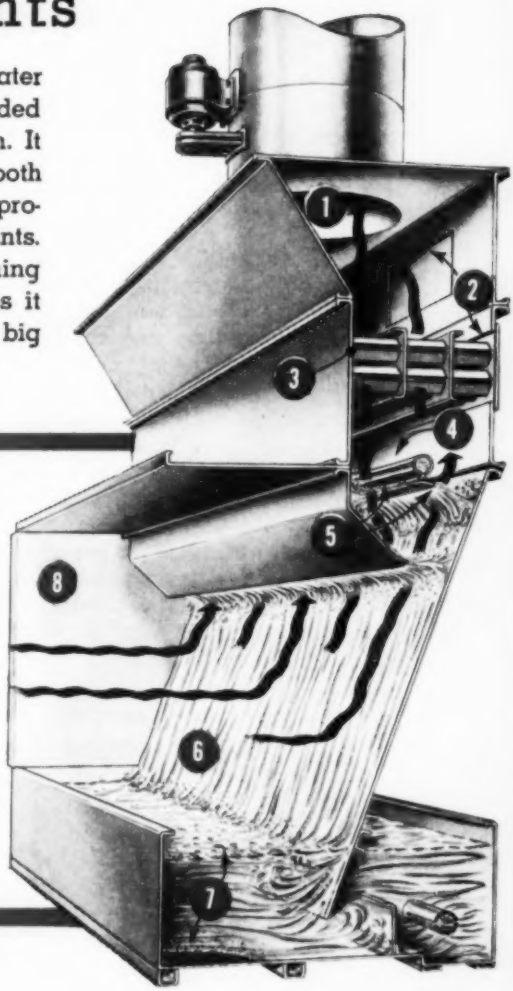
LET US ANALYZE YOUR NEEDS

Without obligation a Binks engineer will gladly call at your office to discuss the advantages of this new booth or to help you with spray painting problems of any kind. Just contact your nearest Binks office or write direct.

ASK ABOUT OUR SCHOOL. **A week of training in best finishing methods, equipment selection and maintenance. No charge for tuition. All welcome. Write for class dates and curriculum.**

Ideal for use in most plants

This new low-cost Style D water wash spray booth is recommended for normal industrial production. It supplements the Style DUC booth which is unequalled for heavy production and hard-to-handle paints. But the powerful double washing action of this new booth makes it ideal and fully approved for the big majority of spray painting installations.



7 Overspray reclaimed. Overspray is washed into the water pan where it is trapped for easy removal or reclamation. This minimizes paint sludge reaching the circulating pump.

8 Rigid, long-life construction. Engineered to give long, trouble-free service.

9 Economical. Costs less, uses less electricity, occupies less floor space, requires less maintenance.

BINKS MANUFACTURING CO.
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Chicago 12, Illinois

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Filter Painting at Fram

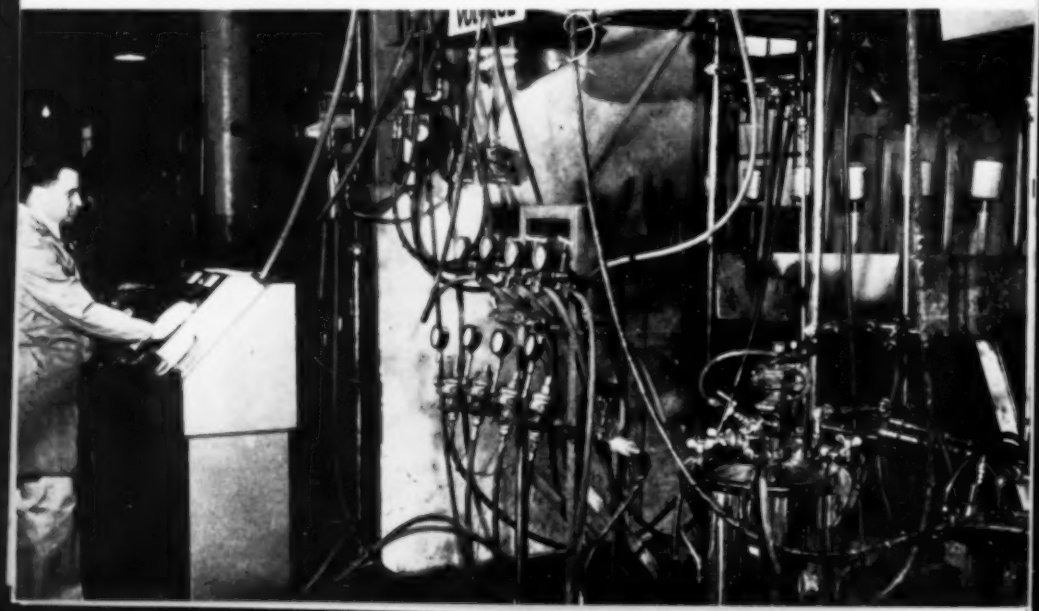
BY MICHAEL FORCHIONE
Finishing Superintendent

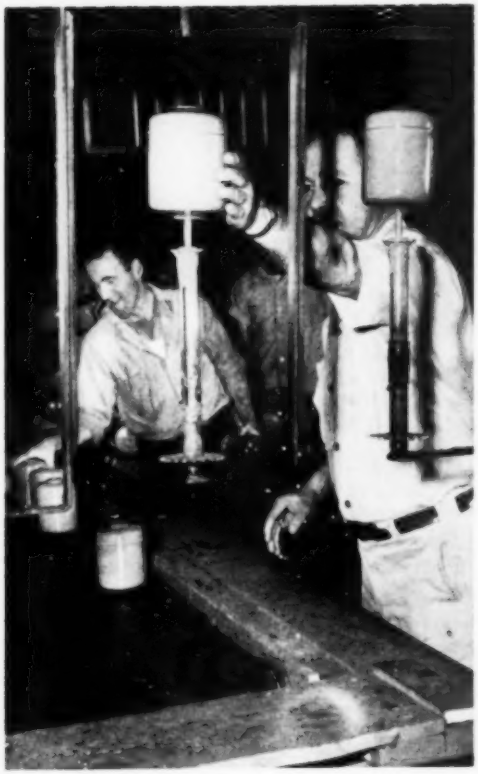
HERE, AT FRAM, the world's largest manufacturer of air, oil and water filters, we use conveyors for handling and moving all of our products, which range in size from a gasoline filter of 2x2-in. to large custom built industrial type filters. Our conveyors are varied and many; for instance, we use a cable type on a combination welding, assembly and cleaning line for some types of filter bodies. As the filter shell is placed on the conveyor, various welding operations are performed, such as placing spuds, drain cocks, brackets, hose connections, etc. As it progresses down the line, spot welding, drilling and tapping are also performed.

Prewash Operation Removes Heavy Soils

After the drilling and tapping operations, the bodies enter a 2-stage washer where, by proper location of the water jets, the bodies are washed and rinsed inside and out. The water temperature is controlled to maintain a constant heat of 180°F. The water level is controlled by float valves to maintain a small but constant overflow to

Easily removable electrostatic paint spray equipment in operating position in 12-ft. booth.





Cool off, parts inspection and transfer to final assembly and packaging lines.

flush off heavy oils and grease which are removed from the filters. This cleaning serves as a prewash operation; that is, we do not depend on this particular operation to really clean for the painting job.

Upon emerging from this washer, the filters are transferred to a monorail type conveyor which, with the exception of the loading, the unloading and painting stations, travels suspended from the ceiling, thus freeing valuable work area at floor level.

Clean; Phosphatize; Rinse; Blow Off; Tack Rag Wipe

First operations on the monorail conveyor are cleaning and phosphatizing. Here again the temperature of the water is closely controlled by thermostats and the water level is controlled by float valves. Our washing consists of a cleaning and phosphating material followed with a hot water rinse and then a chromic acid rinse to help set the phosphating coat. Under normal conditions, the washer solution is titrated every two hours to insure proper cleaning. This, with the previous washing, gives us a 5-stage cleaning job.

As filters emerge from the final rinse, the conveyor makes a 45° climb and comes out on the main floor. Here the filters have the excess water blown off and are also lightly tack-ragged to insure a dust free surface. Immediately after being tack-ragged, the bodies enter a 12-ft. water curtain spray booth wherein we have an electrostatic spray setup which is so arranged that we can take it out of spraying position at any time. This only takes a matter of several minutes. We do this in the event of a major breakdown, or for small runs where it would be impractical and unprofitable to operate the electrostatic unit.

Electrostatic Spraying; Exacting Viscosity

Our electrostatic unit is fitted with standard automatic guns arranged to spray at right angles to the ware being painted. We are not limited as to the number of guns used, as our work is so varied that

the number of guns varies from one to four.

On some types of filters we include a manual touch-up operation to insure perfect coverage. However, on a great many filters, no further touch-up work is necessary.

The paint material used in this equipment, as well as at other spray stations in the plant, is closely controlled as to type of thinner used, and also viscosity. Care is taken to get proper mixing before thinning as well as after thinning. One man is held responsible for the mixing, straining, viscosity, and delivery of paint material to all sprayers. The viscosity in the electrostatic spray is lower, about eight to ten seconds, than what we normally use in the manual spray operations. The air pressure at the gun is from 10 to 12-lbs.; the fluid pressure is from 2 to 4-lbs.

Precautions Taken to Prevent Loss of Paint

As filters enter the electrostatic booth, they pass through a 110,000 high voltage field where the actual painting takes place. Care must be taken in a unit of this type to make sure that no turbulent condition is created in the spray booth, as this would have a bad effect on the material being sprayed, thus causing a bigger loss of paint than is necessary. The viscosity of the paint material is also much more critical than on a manual operation. If the paint is too heavy or if the wrong type of thinner is used, you will have an excessive loss of thinner and, as a result, the painted surfaces will appear rough with heavy orange peel.

As the work to be sprayed enters the electrostatic field, it is rotated to insure uniform painting all around. Our spinner has a variable-speed drive control which enables us to rotate the work from one to 20 times a second. Our guns are tripped by the hangers as the latter come into proper position; thus the guns spray paint only when they are actually within range of the filters.

Five Minute Flash Off; Infrared Bake; Cool Off

After the filters have been painted, the conveyor carries them up to the ceiling to allow a 5-minute flash-off period before they enter an infrared oven. Following baking, the conveyor, still traveling near the ceiling, allows the filters a 20-minute cooling period before it drops to floor level where the filters are removed and transferred to the final assembly and packaging line.

Some of our models are given a light coat of special rust inhibiting oil on the inside of the filter. This is done so that there can be no possibility of rusting before or after installation of the filter. This oil spraying operation is performed at the head of the assembly line; the actual spraying is done with an automatic gun and a revolving table. The spray cycle is closely controlled to insure a light uniform coating of oil. At this point, the filters are 100% inspected for any runs, dirt, sags, or other blemishes.

Some of our filters and component parts are sprayed on what we call the "candletick line." This line is roughly 300-ft. over all and is in the shape of an ellipse. It is 32-in.

You WILL BE IN GOOD COMPANY when

YOU USE... **SURPHOS**

Metal Phosphating Chemical

Currently Used On:

Sheet Steel, Machined and Cast Iron . . . Truck Hoods and Fenders . . . Auto Accessories . . . Tractors and Accessories . . . Clothes Washers . . . Stoves . . . Dish Washers . . . Hot Water Heater Jackets . . . Air Conditioning Cabinets . . . Gas and Oil Space Heaters . . . Outboard Motors . . . Toys . . . Agriculture Implements . . . Lighting Fixtures . . . Diesel Locomotives . . . Many other items.

TO USE SURPHOS:

. . . dissolve in hot water to a concentration of one ounce per gallon and apply to metal by dipping or spraying in a power washing machine. Acid proof equipment not needed.

SURPHOS Conditions Metal For Painting:

- **CLEANS**
- **FORMS PHOSPHATE COATING**
- **PREVENTS RUSTING**
- **IMPROVES ADHESION of PAINT**
- **INCREASES HUMIDITY and SALT-SPRAY**
- **RESISTANCE OF PAINT**

INDUSTRIAL CHEMICAL PRODUCTS COMPANY

3778 BELLEVUE AVENUE **DETROIT 7, MICH.**

Representatives In Principal Cities

In Canada made and sold by Boyle Chemicals Ltd., Longbranch, Ont.

Hand spraying on the "candlestick" line.

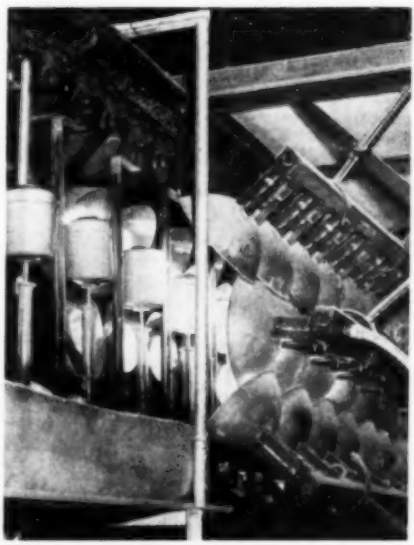
high and has 12-in. "candles." The conveyor speed is controlled by a variable-speed drive; and the baking takes place in a 40-ft. infrared oven which is enclosed except at the entrance and exit ends. This gives us what might be termed "an infrared convection type oven." At the exit end, a suction fan connected with an outside duct furnishes enough ventilation to prevent any accumulation of fumes inside the oven.

For this line, we use vapor degreasing for removing oil, grease and drawing compounds; this is followed by a phosphating solution which we apply by hand at line speed. After phosphating, the filters are allowed to air dry; and they are given a light wiping with a tack rag just before entering the spray booth. Here, we also have a spinning arrangement to revolve the filter in front of the sprayer. All work on this line is finished by hand spraying. The filters are allowed to flash off for two minutes before entering the infrared drying tunnel.

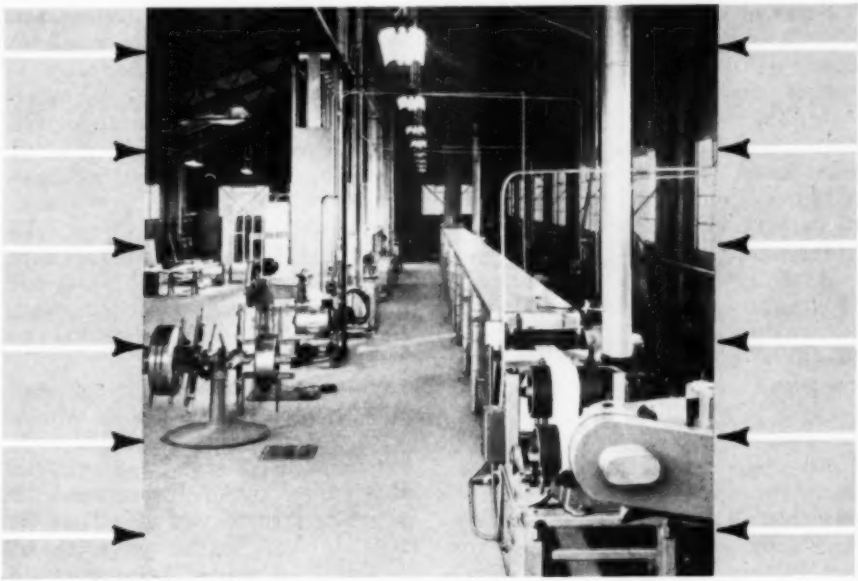
After baking, three large fans are directed on the conveyor line of filters to cool them to room temperature. Upon cooling, the parts are inspected and either stacked or transferred to the final assembly and packaging lines.

Custom Built Large Filters Call for Special Treatment

Many of our industrial and custom built filters are too large to be handled on our regular production lines. We have to consider this, plus the fact that most of them are built to rigid engineering and painting specifications. The preparation and painting of these units calls for special treatment and handling, practically on a unit-to-unit basis. [*Continued on page 32*]



Moving through the infrared oven.



Don't Let Small Space Deprive You of

ROLLACOATING Speed and Economy

Here's one way Gasway engineers adapted continuous ROLLACOATING to restrictive length requirements. By developing a U-shaped unit, they U-tilized available space for double-duty effectiveness. The strip passes through an elevated cross-over, at rear. Feed and re-wind are virtually side by side for added convenience of operators.

Don't take it for granted that limited space makes efficient ROLLACOATING out of the question. Vertical installations, multiple parallel lines operating at slower speeds, and other Gasway innovations work wonders in restricted areas.

Engineering initiative, however, is just one "plus" of dealing with the leader, for Gasway ROLLACOATING quickly pays for itself, as well as for building alterations. A continuous unit, as illustrated, can perform every function from cleaning and treating to coating both sides, baking, and re-coiling—all in a single pass. It gives you fastest-of-all paint application without wasting a precious drop. Write for the whole savings story.

See ROLLACOATING in action!
National Metal Exposition
SPACE 1512
Intern'l Amphitheater
Chicago—Nov. 1-5

Gasway CORPORATION

6463 N. RAVENSWOOD AVE.
CHICAGO 26, ILLINOIS

Some of the industrial filters are fabricated of heavy gauge aluminum. All fittings and inlets and outlets are welded into position. After the welding and assembly operations, the filter body is carefully sandblasted with a very fine grit abrasive. Care must be taken to make sure that threaded or tapped areas are fully protected.

After sandblasting, the units are thoroughly cleaned in preparation for anodizing. Anodizing, as most finishers know, is a process of chemically treating the aluminum surface to guard against corrosion. In many industries, no further protective coating is applied. However, our anodizing is followed by painting. The anodizing gives us a very good bond to the aluminum for our painting operation and assures our customers of years of trouble-free operation insofar as corrosion is concerned.

These units are manually sprayed; we give them two coats to insure a minimum of a two mils thickness of film. Each coat of paint receives a ½-hour bake at 300°F. in a gas fired oven. As our filters handle a great variety of liquids, our finishing materials are formulated to give us the best possible adhesion and resistance to abrasion, heat, acid, alkalies, gasoline and oil.

Roller Coating Flat Sheets; Material Storage System

We use the roller coating method for painting sheet metal on one side. The bake is at 350°F. in a gas-fired oven for one hour. After baking, the sheets are cut to the proper size and rolled to form a can. To withstand the rolling operation, the film of paint material has to be hard and flexible.

In conclusion, I want to touch briefly on our storage system. We have all paints, solvents and allied cleaning products on inside storage where they are kept at a temperature of 70°F. the year round. All material is stamped with the date received and drums are taken out in the order received. In that way, we are always using the oldest material first.

When paint material is removed from the storage area, it is always taken out 24 hours in advance. It is mounted on a stand and agitated with an air motor for at least 12 hours before use. At this time, it is again rechecked for coverage and drying. All drums of paint material are checked for coverage, drying and durability upon being received.

Glidden's Ind. Finish Expert in Evansville, Indiana

Harold R. Lyon, 1037 Ravenswood Dr., an industrial finishes expert, has returned to Evansville as sales engineer in the Evansville area for the Nubian Industrial Division of The Glidden Co.

Glidden's Nubian Division specializes in the production of industrial finishes for large volume users.

An Evansville native, Mr. Lyon left his home city in 1952 to direct painting operations at Coshocton, Ohio, works of G. E. Co. Last year, he joined the Technical Service organization of Glidden's Nubian Industrial Division at Chicago, a department existing to help customers solve painting and finishing problems peculiar to their own products.

Woodside, Jr., President of Park Chemical

At a Board of Directors Meeting on September 24, W. P. Woodside, Jr., was elected President of the Park Chemical Co., Detroit, Mich. Woodside has been associated with Park for the past 18 year as sales representative in the Cleveland territory.

THE SOLVENTS AND CHEMICALS GROUP

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WANT quick, helpful suggestions for the solution of technical problems involving solvents and chemicals? Call your nearby member of the Solvents and Chemicals Group. Here's why . . .

1. Each member maintains laboratory facilities to help serve industry as well as control quality and purity of incoming products.
2. Each group member has technically trained men familiar with problems in the industries they serve.
3. Each member is free to call on the technical departments of its nationally-known principals. Members welcome an opportunity to provide assistance on any bona-fide problem in the areas in which they serve.

Unbiased technical service is just one more reason for choosing Solvents and Chemicals Group members as your source of supply. Investigate this modern, time-saving, money-saving service that supplies *what* you want . . . *when* you want it . . . *where* you need it . . . all with just *one phone call!* Call your nearby Group member or write . . .

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American Furnace Compan

if you want to sell it,

DRES

with Polychrome Metallic Finishes

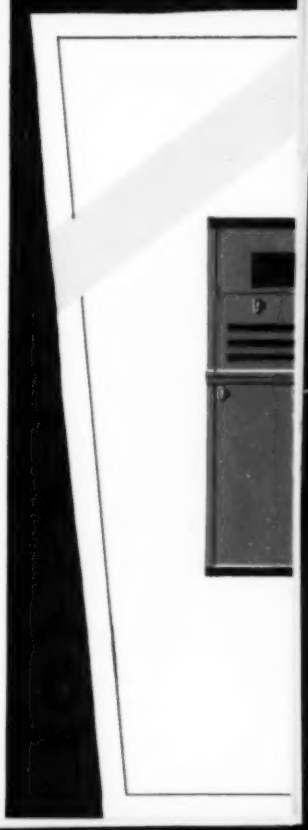
American Furnace Company, St. Louis, Mo., finishes all of its furnace units with a textured Polychrome Metallic Finish made with sparkling flakes of pure ALCOA Aluminum. This textured finish reduces the amount of surface preparation required on the metal . . . reduces the over-all cost of this operation. Moreover, the company has found that a "dressed-up" furnace sells faster . . . that a customer prefers an attractive finish that adds color and beauty to his basement, playroom or furnishings.

The company states: "We are proud of the distinctive finish of our furnaces. It makes our product more desirable because it blends well with the decorative scheme of any portion of the house."

Paint manufacturers working with ALCOA Pigments have developed an array of pleasing hues that are building big sales for a wide variety of products. There's one to dress up your product, too.

Polychrome Metallic Finishes cost no more than ordinary coatings. Just spray on, then bake or air-dry to a lustrous finish.

Get the facts from your paint manufacturer on the sales-building features of Polychrome Metallic Finishes. Or write ALUMINUM COMPANY OF AMERICA, 1732-K Alcoa Building, Pittsburgh 19, Pa.



ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

knows

SIT UP

"SIAMESE TWIN" CLEANING RACE

ENGINEERED by A-F to clean cutting oil from small parts and the metal boxes in which they are conveyed, this A-F "Duo-Cleaning" Machine was built in the form of a "Siamese Twin"—with both the A-F Rotary Drum Unit and Wire Mesh Conveyor Unit in the same housing so as to use the same set of pumps and the same supply tank.

The small parts are cleaned in the rotary drum unit—the metal boxes are cleaned in the wire mesh conveyor unit . . . As the parts and boxes "race" through the cleaning process, the two machines are synchronized so that the boxes always come out first, in plenty of time to carry the same parts on to their destination.

Have you a metal products cleaning and processing problem? Let A-F Engineers help you solve it.

The Alvey-Ferguson Co.

757 Disney St., CINCINNATI 9, Ohio • WEST COAST: Box 244, Azusa, Cal.

ALVEY-FERGUSON

CLEANING AND PROCESSING MACHINES

Painting Steel Drums in SINGAPORE

(PART IV)

BY C. RAYMOND SYER
Metal Finishing Consultant

Selection and evaluation of lining material; air dry and baking schedules; pigmentation; mixing in catalyst; viscosity; spraying technique; prevention of blisters; the final results.

WHILE IT'S been mentioned that the drums finished in Singapore were for one of the world's largest petroleum companies, on this around-the-world assignment, processes were recommended and evaluated for lined drums in Australian plants, for products other than high octane gasoline.

What Lining Coating We Selected, and Why

Several types of linings were used and evaluated and each material had definite qualifications for certain products. However, for high octane gasoline shipments in the Far East, the Epon resin materials were evaluated superior because of the following characteristics:

Epon Resin Formulation XA-200 represents an entirely new type of surface coating vehicle. It combines properties attainable for a single coating operation and can therefore be used in a wide variety of finishes. The properties of this formulation are as follows:

1) Exhibits excellent adhesion, flexibility, and chemical and solvent resistance.

2) Cures at room temperature, or may be baked at temperatures up to 450° F. Provides properties comparable to baked finishes, even when air-dried.

3) Performs well over a phosphatized, chromic acid revised steel surface (excellent adhesion, with no signs of brittleness).

4) May be applied at high solids (60% to 70%) to give a 5-mil to 7-mil film in one coat. However, when used as linings for steel drums, only .0075-mil dry film was necessary, spray coated.

5) Can be used in the clear (has a light color) or may be pigmented; makes excellent cream, grey or white for lining shade.

6) Has excellent weathering properties, and outstanding salt spray resistance. [*Cont'd on page 38*]

A Coating That Dries Without Baking

As mentioned above, this coating provides properties comparable to baked finishes without the necessity of baking. Polymerization is achieved through chemical reaction of the ingredients at room temperature, thus eliminating the baking operation and permitting the application of heavy films in one coating, since oxidation is not a factor in the cure.

The reactive portions of the Epon resin molecule are cross linked by the action of an amine such as ethylene diamine or diethylene triamine to form the insoluble infusible coating normally characterized by baked phenolic and amine resins. The stability of the separate ingredients is excellent, and pot-life, after mixing the two components, may be varied from 18 hours to 60 hours by variation of the solvent blend and by the choice of amine reactant.

Only Slight Change in Formulation for Baking

In addition to curing at room temperature, the formulation will form an excellent force dry vehicle suitable for chemically resistant coatings. Slight variation in the above formulation is desirable if the system is intended for baking. The change involves use of diethylene triamine in place of ethylene diamine. Amine concentration of 6ph$_r$ (parts per hundred parts of resin) remains unchanged. Usable pot-life, using diethylene triamine as a catalyst, is about 40 hours.

Films cured for 1½ hours at 130° to 140° F. show flexibility and solvent resistance right after force drying. At the shorter schedules shown below, films are produced which are hard, but they do not reach maximum flexibility for about 24 hours.

100° F. for 1½ to 2 hours.
110° F. for 1 to 1½ hours.
120° F. for ¾ hour.
130° to 140° F. for ½ hour.

High heat baking schedules for the formulation containing diethylene triamine are given below:

20 minutes at 200° F.
10 minutes at 250° F.
7 minutes at 300° F.
4 minutes at 350° F.
2 minutes at 400° F.
1 minute at 450° F.

These schedules yield films that are fully cured and require no further aging for either flexibility or solvent resistance.

Pigmentation; What Color And Why It's Used

This material can be used in the clear. However, when a percentage of titanium dioxide and black pigments are ground in a solution of Epon 1001-97% W. prior to addition of Beetle 216-8, 3% W., a grey finish is available, which is desirable because then one can more readily detect any imperfection in the application.

The metal preparation procedure was explained in a preceding article, therefore, we will continue with the procedure used in the handling of materials, application and curing of the interior lining type of material used, as explained above. We did use other types of lining material, but because of being able to use a short baking schedule, a one coat application, and because the material stood up so well under all

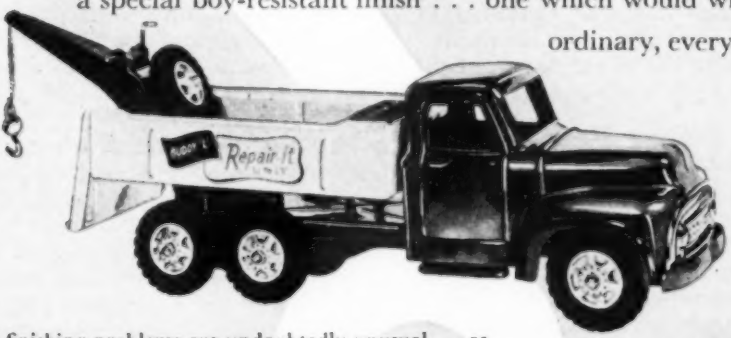
It happens every day...

EVERYTHING GETS

"REPAIRED"

BUT THE FINISH

Engineers at Moline Pressed Steel recognized the inquisitiveness of youngsters when they designed their "Buddy L" Repair-It Unit . . . a sturdy truck, complete with jack and tools to encourage mechanical aptitude. These designers did not overlook the relentless beating the finish would take during tune-ups and tire changes. As with all Buddy L steel toys, Moline turned to the Arco Laboratory for a special boy-resistant finish . . . one which would withstand ordinary, everyday "repairs".



Your finishing problems are undoubtedly unusual . . . as are those of so many product designers. Why not place them in the hands of experienced formulators at ARCO . . . experts who tailor quality paints to exacting specifications . . . and pre-prove performance by Arco Cycle Testing, a system which evaluates finishes to a degree unequalled in the industry. Write for full details.

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required evaluation tests, the process is written herewith using the Epon resin formulation material. Other materials used required a 2-coat application, two separate bakes, and a longer and higher baking schedule. This meant higher labor and material cost and, with the equipment available for use, less production per hour.

After the side welding, and precurling operations, and prior to the swedging operation, the drum body was placed on a machine designed for grinding the inside welded seam to a smooth surface. With a smooth surface, a better quality interior lining finish was available, without danger of having poor adhesion, brittleness, corrosion or failure of the lining finish.

Incidentally, some of the first drums finished were shipped before the grinding machine was built. Upon their return we found corrosion along the seam; however, after the machine was used, examination of drums returned for inspection showed no signs of corrosion or failure along the welded surface.

Mixing Coating Material With Catalyst

The Epon resin lining material and catalyst were formulated and shipped from the United States to the Singapore plant. Solvents required were purchased locally.

The virgin material was agitated for one hour, and then the required percentage of catalyst was added to the quantity of virgin material drawn from the drum. This mixture was agitated for five minutes by an air-driven agitator. Toluol and butyl-alcohol solvent were mixed 50/50 and added to the catalyzed material; ratio, four parts of material to one part of solvent. This mixture was then agitated for 30 minutes, assuring complete mixing. Care was taken for accurate measurements of the materials.

Viscosity of Material for Spraying; Film Thickness

A well known U. S. spray equipment manufacturer's M.B.C. extension spray gun was used; it was equipped with No. 765 air cap, FX needle and fluid tip. An air driven agitator was used in the pressure tank. The fluid pressure was set at 10-lbs. at the pressure tank, and the atomization pressure at the spray gun was 35-lbs. Viscosity of material was 18 seconds at 77° F. The required dry film thickness, .0075-mil.

The body of the drum was sprayed, care being taken that a uniform coat was applied. The operator was trained to handle a spray gun efficiently, and in order to obtain this uniform dry film thickness, he would operate his spray gun at a determined withdrawal speed, by counting.

The drum rotation in the spray booth was set at 60 revolutions per minute, and the count for completing withdrawal of spray gun through the drum body was set at 8. Measurement of dry film thickness, using an Elcometer gauge, showed that a uniform thickness was being obtained.

Infrared Flash-off Drying Prevented Blisters

Wet lined drums, after leaving the spray booth, entered the infrared pre-bake oven. This oven was used for flash-off of solvents, and

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from its use we were able to prevent blisters. When no flash-off time of solvents was allowed and drums entered high heat immediately after being sprayed, blisters appeared. We also found that when too heavy a coat was applied, pin holes appeared. To prevent this, we made two passes of the spray gun, applying a mist coat first and then immediately following with the full coat.

The baking schedule was five minutes at 200° F. in the prebaking oven, and two minutes at 375° in the convection type oven.

Drum Heads and Bottoms Sprayed on Turntable

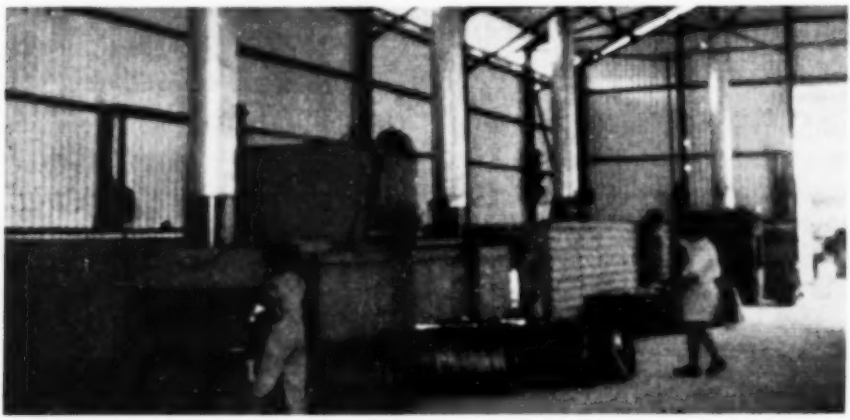
Drum heads and bottoms were sprayed separately on a turntable. The same baking schedule was used.

After some 50 drums had been shipped out as test drums, and after three months going through actual shipping procedure, they were returned to the Petroleum Company for examination as to how the lining had reacted. However, before drawing out the high octane gasoline, the drums were given extra abuse by hitting them with a heavy crowbar, making deep indentations in the sides of the drums. When examined later, there was no evidence of breakdown of this lining from the metal; neither were there any signs of corrosion.

The author of this article does not represent any petroleum company or paint manufacturer, and this series of articles is written solely to submit his experience in the Far East, and for any value that may be obtained from it by readers of this magazine, which he found being read by companies he visited around-the-world.

New Barrel Finishing Lab Opened by Roto-Finish

A new experimental laboratory has been opened by Roto-Finish Co., 3700 Milham Road, Kalamazoo, Mich., manufacturer of barrel finishing equipment. The laboratory will be devoted to development and testing of abrasive media and machines for finishing parts not suited to conventional barrel equipment.



Covers and bottoms being coated with interior lining. Then they are moved through ovens.

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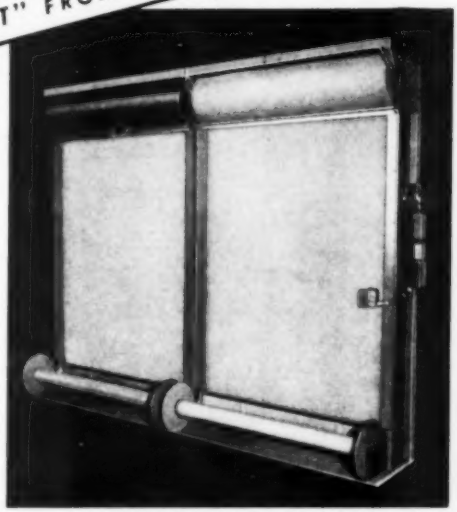
The low cost media, a "blanket" of bonded glass fibers sprayed with a non-flammable fluid-jell adhesive, is mounted in roll form at top of the filter. It moves as a continuous curtain down the face of the ROLL-O-MATIC and is re-rolled on a driven spool at the bottom. Movement of media is controlled by an automatic time switch which introduces sufficient clean material to maintain the desired operating resistance.



A ROLL-O-MATIC filter of two 5'0" wide by 8'0" high sections — capacity 26,700 cfm.

What's the end result of all this for the user? *Continuous, high efficiency cleaning at an operating cost less than half that of a disposable type filter of equal capacity!* For complete facts, contact your local AAF representative or write for Bulletin No. 248.

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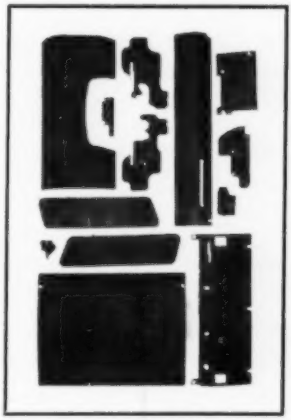
YES – now you can paint short runs of a variety of parts, *automatically!*

The versatility of DeVilbiss Transverse Automatics lets you combine many different parts and components for precision, automatic painting in gang runs – the kind of painting that, in the past, seemed possible only by hand spraying! Not only is automatic spraying faster, but you enjoy *big cost reductions* as well!

In addition, DeVilbiss automatic spraying gives you finishes that are more uniform in film thickness, color and texture; its exact control practically eliminates rejects!

A call to your nearest DeVilbiss representative will bring a qualified technician to survey *your* production painting. He will let you know if your operations are adaptable to DeVilbiss automatic spray-painting equipment – and its big savings. Call today!



Objects of various sizes and shapes like these receive a uniform finish in a gang run on a DeVilbiss automatic spray machine.

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THE UNITED STATES, CANADA AND THE WORLD

Ovens for Force Drying Wood Finishes

BY WALLACE HERDLEIN
Vice President, The R. C. Mahon Co.

THE FORCED drying of wood finishes has become an operation of major importance as a result of the conveyorization of the finishing lines in furniture factories. With any appreciable chain speed, it is apparent that the the amount of conveyor and floor space begins to get impractical for long periods of air drying.

Providing and Controlling Humidity in Oven

Further, continuously operating lines must perform on definite cycles and cannot depend on natural temperature and humidity conditions. It follows, therefore, that forced drying becomes a necessary part of modern production lines. The building of furniture dryers and the heating, ventilating and humidifying equipment required is relatively simple in that the temperature involved usually ranges from 125° to 175° F.

In some of the early units, the equipment for humdifying, and sometimes the heating units, too, were much more elaborate than they had need to be. Some of these complicated units—because of their very nature — were poorly maintained. Subsequently, we have made every effort to simplify the entire system. Almost all furniture factories are equipped with boilers and heating facilities using steam, and for this reason, and the fact that furniture ovens operate at such a low temperature, steam is generally used for the drying.

In the early operations, the air passed through spray nozzles, and wet and dry bulb thermometers were used for controlling temperature and humidities. There is nothing wrong with this method except that it is expensive and requires a considerable amount of attention. With the usual temperature range for wood-fiinishing ovens, a simple hair humidistat is satisfactory. The use of water-spray nozzles can be avoided by simply injecting steam into the air stream.

Oven Walls Insulated; Air Seal at Openings

Ovens or drying rooms for force drying wood finishes have been built in a number of ways. Some have been built of plaster board nailed to both sides of 2x4-in. wood framing . . . The better drying

*From a paper presented at the eighth Annual National Meeting of the Forest Products Research Society in Grand Rapids, Michigan, May 5, 6, and 7, 1954.

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rooms are built of steel-covered panels with an inch of good insulation between the steel sheets. Most of these drying rooms have been located on reasonably thick wood floors which have some degree of insulation. Occasionally, a mistake was made by placing an oven of this kind on a concrete first floor. Obviously, one of these is hard to heat and difficult to humidify.

While we would like to see all ovens made of the natural or bottom seal type, most furniture ovens have conveyor openings in the side or the ends of the ovens requiring an air seal of some nature to prevent loss of hot air into the room. Aside from the oven exhaust air, which should meet the insurance standards, any excessive air discharged by an air seal is wasteful, and for this reason the seal arrangement should be designed to be as economical as possible.

Ovens Must Be Designed With the Finishes in Mind

While we are interested in the manufacture of drying equipment, we are not qualified to discus finishes. We must continue to build equipment to suit any finishing material. Most of the first dryers were built for the usual stains, sealers and varnishes or lacquers, all of which were air-drying materials. Since that time, clear synthetics, baking at 170° F. for about two hours have been developed, and for this reason, we believe most ovens should be designed for temperatures of 170° F.

It has been the usual practice to install automatic controls for temperature and humidity. Regardless of temperature, the humidity is usually specified at 35%. We have seen a great many ovens in which the humidity-control equipment was out of order, but which seemed to be doing a satisfactory job without any humidification, although it would certainly seem to be much better practice to maintain about the same humidity in the oven as generally prevails in the factory.

Features of Good Oven Control Equipment

In setting up a complete heating system, the addition of a good humidity control costs so little extra that it could not well be omitted. Aside from the air seal of exhaust units, the heating and humidifying equipment and the recirculating fan and all accessories, including motors, temperature controls and humidity controls, are usually built into a single unit or cabinet which is located on a wall of the oven. From this unit the heated and humidified air is distributed throughout the oven by a series of ducts arranged for the establishment of uniform temperatures.

Usually the centrifugal fans in these hot air streams are provided with high temperature oils or greases and the motors and belts are also for high heat operation. The steam coil is usually equipped with a direct acting modulating control valve with the bulb in the return air stream. The humidistat is also located in the return air stream and controls the amount of steam entering the recirculating stream. Usually this latter is an "On-Off" control. [*Cont'd on p. 50*]

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Furniture ovens usually require so much floor space that if at all possible they should be located on the roof of a building, with the spray booths and possibly the heating units located on the floor below.

Consider the Conveyor and Where Oven is Located

There are two general types of conveyors for ovens—the continuous overhead trolley and the floor type. The latter may be of the push-along or continuous design. Trolley conveyors allow clean conditions through spray booths, and work well in multiple story buildings where long continuous runs are necessary from floor to floor. In many factories roller or pallet-type conveyors are used.

Sometimes roller conveyors or pallet conveyors are used in a manner that permits bunching of work in the drying ovens. Bunching saves floor space, but cannot easily be done with trolley conveyors and the merits of the trolley system are then sacrificed to smaller floor area. With overhead ovens on top floors or on a roof, the floor-space problem is minimized . . . . The type of conveyor influences, to some extent, the floor space required.

Get Finish Supplier and Oven Manufacturer Together

In the final analysis, the oven arrangement and type of conveyor is usually dependent on a group of factors which vary widely from plant to plant. Some of these are: Quantity of work moving through every day, factory floor space available and roof space that may be available.

Frequently ovens are installed with more thought given to how small they can be made rather than to the best design. Smaller ovens must operate at higher temperatures and for this reason they may be less efficient. Slower drying at lower temperatures is more nearly fool-proof, and we are sure that, on this score, most of the finishing department operators and all paint suppliers will agree.

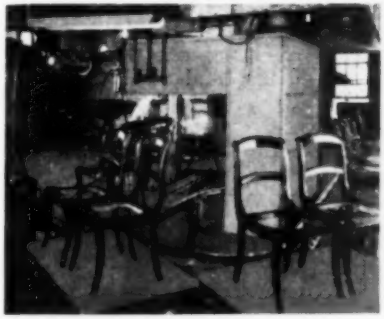
For all those contemplating the installation of finishing equipment, we would recommend that the finish supplier and the equipment manufacturer be brought into a conference to discuss all of the various phases of the contemplated installation. This group should consider the work load, kind of finish, type of spray booths, conveyor and oven, and on the basis of these considerations, design equipment that will best meet requirements, including the most effective location in the manufacturing plant, so that the utmost in quality and efficiency may be attained.

Burton G. Adams Joins Pennsalt Chemical Specialties Division

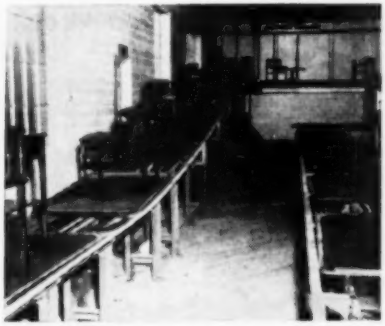
Burton G. Adams has been appointed Sales Representative in Southern California for the Chemical Specialties Division of the Pennsylvania Salt Mfg. Co.

Mr. Adams will be responsible for the full line of

and metal surface preparations, including the Foscoat and Fosbond processes, and will be available for service to metal finishing companies throughout the Southern California area. He will have his headquarters at 4820 Loma Vista Ave., in Los Angeles, California.



176' DeBurgh Finishing System



5,651' DeBurgh Finishing System

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***Pat Nos. 2317675, 2640580, 2640607**

Removes Clinging Drops From Dip-Coated Work

I WAS DRIVING through a town recently when I remembered an old friend who is now superintendent of a local plant, so I stopped in to see him. After talking over old times, he asked me to walk through the plant. When we arrived in the finishing room he introduced me to the foreman, and the three of us walked around together to see the various operations.

They were coating ⅜-in. x 3-ft. dowels by dipping, then drawing each dowel through a perforated rubber squeegee to remove the excess material. This is the same method used to coat broom handles. Farther along I saw them dipping some turned pieces about 1-in. in diameter and 10-in. long. First, these spindles were dipped in stain; then, after air drying, they were dipped in a clear top coat material, allowed to drain, then to air dry overnight.

Next I was surprised to see them spray finishing some perfectly plain tapered pieces about 1½-in. square at the big end and about 18-in. long. I asked the foreman "Why don't you dip finish these pieces?"

"We tried it but were not successful." he replied. "We got runs, sags and fatty edges at the bottom. It's funny; we can dip those turned pieces but not the plain ones."

Now I had seen solvent vapor drain tunnels used in dipping and flow coating metal products to aid in correct drainage, and I saw no reason why such a tunnel would not promote satisfactory drainage of finishing material from wood as well as from metal. I asked the foreman if he had ever tried draining the pieces in a solvent vapor atmosphere? He said they had not, and he didn't believe it would work.

I suggested an experiment. We took an empty, open end solvent drum and poured into it ten gallons of the same solvent that was used in the coating material. We picked up a piece of plywood large enough to cover the open drum, and used this as a pin rack to hold ten of those tapered pieces of wood. We dip-coated the ten pieces and then covered the drum with the plywood rack—with the dip coated pieces pointing down inside the drum. They didn't touch the solvent in the bottom, but they were suspended above it in the upper solvent vapor zone.

The plywood rack served as a cover to confine the solvent vapor while the pieces drained. Not knowing the viscosity of the dipping material, we had to try several lots before arriving at the proper drain period of four minutes. Drainage was entirely satisfactory. There were no runs, sags or fat edges. I had proved my point, but of greater importance they had learned how to dip-coat these tapered pieces successfully.

When we returned to the office, the superintendent telephoned a firm of finishing equipment suppliers and asked them to send over one of their engineers to figure on a conveyorized solvent vapor drain tunnel to be installed at the exit end of the dip tank. —*H. R.*

Mobile Lacquer Information

The mobile lacquer information center of Hercules Powder Co. has hit the road again, this time for Canada.

The trailer is refurbished with new displays which tell the story of important new developments in lacquers, chlorinated rubber finishes, a new ink for "Mylar" film, and new hair lacquers.

Before going on this Canadian trip the exhibit traveled about 14,000 miles in this country and was visited by more than 8000 persons.

The exhibit is housed in a custom-built lacquered, 35-ft. trailer completely fitted as a traveling display.

A display of high-gloss lacquers includes a door of a new polyester plastic automobile, finished with a coating of white lacquer; and samples of products finished in orange and yellow.

On the building pictured above we have technical and laboratory facilities available to help improve and speed up your furniture finishing.

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We manufacture both clear and water white lacquers and sealers of the highest type—low and high solids—with cold check resistance—tough—flexible—alcohol resistant—in fact just about everything in a lacquer finish you might expect, either hot or cold, formulated for spray application. Also pigmented lacquers any sheen to meet your requirements.

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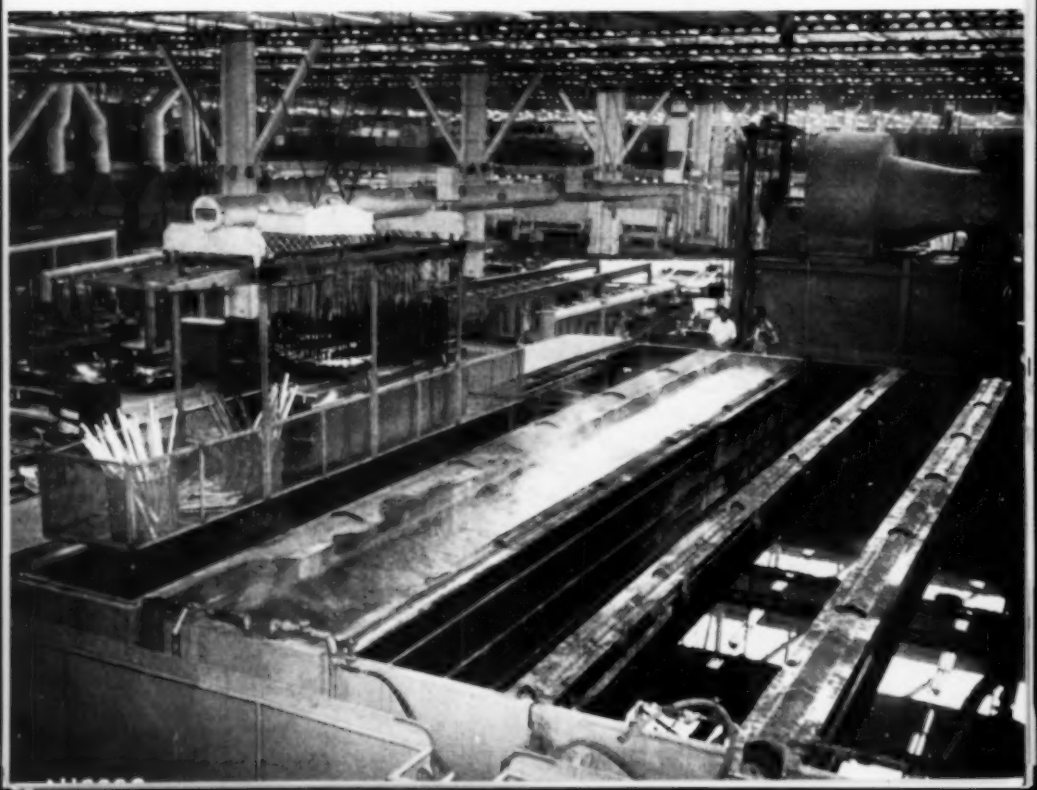
Lockheed's New Setup For Treating Aluminum Parts

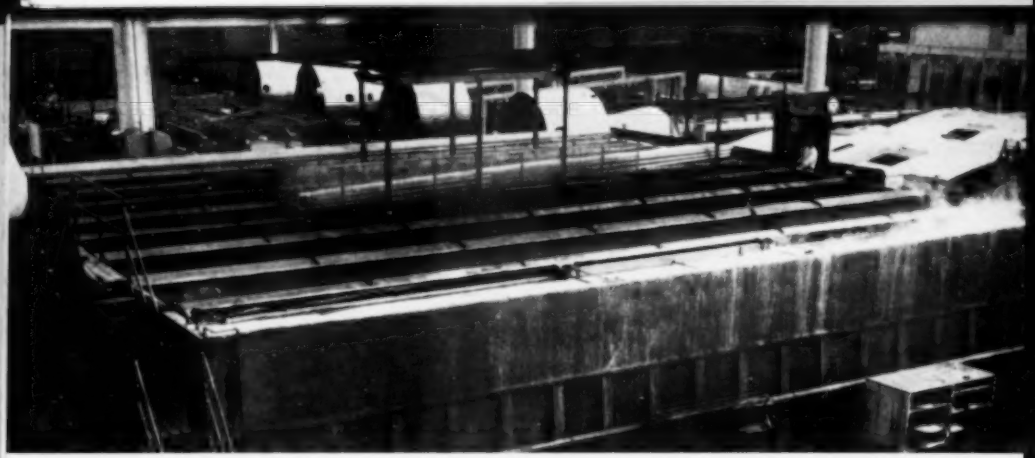
BY W. F. CASTELL
Process Control Engineer
Lockheed Aircraft Corporation

BACK IN 1950, RESEARCH personnel at Lockheed Aircraft Corp. began an intensive investigation of the chromate conversion process and other chemical surface treatment used to protect aluminum and its alloys from corrosion.

Two specific needs prompted this research. First, we were interested in determining whether there was a better, less costly and less time consuming process than the chromic anodic process then in use. Secondly, as the increasing size of components to be processed, such as longer wing spars, huge sculp-

A 25-ft. stainless steel basket, loaded with parts and handled by an 8000-lb. capacity overhead crane, is being transferred from one solution tank to the next tank during treatment.





Metal treatment facilities include eight 18,000-gallon processing tanks and a dryer tank.

tured skin and fuselage sections, etc., was overtaxing the size of our chromic anodic facilities, it was apparent that a new processing installation was necessary. We wanted these new facilities to accommodate and expedite the use of the best aluminum surface treating technique available.

No Electric Current Needed; More Parts per Basket

From the very start, it was evident that the chromate conversion process had definite advantages over anodizing. First, as the process is a chemical rather than an electrolytic reaction, no electric current is required. Secondly, mounting or basketing of parts for treatment is greatly simplified, as the need for positive electrical connections is eliminated. Third, the time required for processing is reduced from approximately 45 minutes to around five minutes. Fourth (and most important from the standpoint of aircraft work), critical comparative testing proved that the chromate conversion treatment provided a degree of protection that was just as good or better than that provided by anodizing.

Eight Large Tanks for Processing Aluminum

With this data, substantiated by almost three years of comprehensive laboratory testing and pilot shop runs, in 1953 Lockheed proceeded to install the largest chromate conversion processing facilities in operation anywhere in the world. These facilities include eight huge tanks, each 50-ft. long, 4-ft. wide, and 12-ft. deep, and each of 18,000 gallons capacity. A dryer tank of the same dimensions completes the setup. Table No. 1 lists these tanks, their contents, and their construction; table No. 2 lists the solutions employed, their composition, operating temperature, and immersion times. [*See following pages*]

As above-the-floor, side-by-side installation, these tanks are serviced by an overhead crane hoist of 8,000-lbs. capacity, operated from a catwalk position by flexible hanging controls. Since no electrical connections are required, methods of immersion may be varied to suit the parts. Huge skin sections, spars, etc., may be individually hung for immersion. The usual run of parts is immersed in large stainless steel

baskets. Small parts, such as nuts, washers, clips, etc., are contained in small mesh stainless steel baskets set in the larger baskets. Racks, hangers, etc., may be set in or out of the large baskets as required.

Unlike the chromic anodic anodizing solution, the chromate conversion solution does not attack the stainless steel handling baskets and frequent basket replacements are not necessary. At Lockheed, this single factor results in an annual saving of some $15,000.

Supplementary equipment in the new setup includes a 4-tower water demineralizer which furnishes water to the tanks that is free of

Unit Description	Materials of construction
Tank No. 1 Alkaline cleaner Steam heated (180° to 200° F.) Circulating pump and overflow dam	Plain steel tank, steel pipes for 100-psi. steam pressure.
Tank No. 2 Cold water rinse Spray nozzles and overflow dam	Plain steel tank.
Tank No. 3 Chromodizing solution* Steam heated and ventilated	Plain steel tank; steel steam coils.
Tank No. 4 Cold water spray rinse	Thin gauge steel tank with concrete bottom.
Tank No. 5 De-oxidizer	Steel tank with Koroseal lining.
Tank No. 6 Iridite No. 14 (Al-Coat)	Steel tank with Koroseal lining; stainless steel heating coils.
Tank No. 7 Cold water spray rinse	Thin gauge steel tank with concrete bottom.
Tank No. 8 Hot water rinse	Vinyl-lined steel tank with vinyl-coated steel steam pipes.
Tank No. 9 Hot air dryer Steam heated with 4 Airfin heaters and blowers	Steel tank with air-operated sliding lid made of plywood on a steel frame.

Table No. I: The nine large tanks—what they contain and what they are made of.

*This solution is used for parts requiring a bright finish.

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For glare-free surfaces . . . produced during short baking operation . . . opaque enamel base has good defect-hiding properties.

Specify Reynolds Aluminum Pigments for your polychromatic finishes—Regular, Hammered or Wrinkled—for consistency in color and result and constant high-quality and performance.

Reynolds patented* non-leafing aluminum pigment remains evenly dispersed as the coating sets-up. The aluminum flakes produce depth and iridescence.

Reynolds technicians will work with you and your finishes supplier to achieve the right polychromatic finish for your product.

Reynolds Metals Company, 2533 South Third Street, Louisville 1, Ky.

SEE "Mister Peepers", starring Wally Cox, Sunday nights on NBC-TV.

*U.S. PATENTS 2,309,377 AND 2,293,731; CAN. PATENT 472,685

REYNOLDS ALUMINUM

MODERN DESIGN HAS ALUMINUM FINISHES IN MIND

Solution	Operating Data
Alkaline Cleaner Solution	8-oz/gal Altrex aluminum cleaner* Operating temperature: 190° F. Immersion time: 10-min. minimum
Deoxidizing Solution	8-oz. per gal. No. 34 solution* with addition on 1% of sulphuric acid. Immersion time: 3-min. maximum. (Immersion time at correct pH is critical to prevent sludge formation on bare 24ST alloy.)
Iridite No. 14 Solution	3-oz. per gal. Iridite No. 14 compound. Operating temperature: 85° F. Immersion time: 3 to 4 minutes (Maintain pH range 1.4 to 1.7 by additions of nitric acid as necessary.)
Hot Water Rinse	Operating temperature: 140° to 160° F. Immersion time: 1-min. maximum.
Hot Air Dryer	Operating temperature: 200° F. maximum.

Table No. 2: Details of processing solutions; temperature, length of immersion, etc.

*Name of material and manufacturer on request.

minerals and slightly acidic, with a pH just right for optimum results. The chromate conversion solution tank, using Iridite No. 14 (Al-Coat) has automatic temperature control and automatic temperature recording. The same type of temperature control is used on the chromodizing tank and the hot air dryer. Temperature indicators and self-actuating temperature controllers are used on the alkaline solution and hot water rinse tanks.

Exhaust ducts and a fan were installed for the chromodizing tank. A slurry tank is used to facilitate additions to the alkaline cleaner, and a portable stainless steel tank and pump take care of additions to the chromodizing, de-oxidizer, and Iridite tanks. An automatic pH indicator is used for checking the acidity of the processing solutions. The entire installation is as automatic as it was possible to make it, both to reduce labor requirements and to improve the general work quality level.

The chromate conversion process produces a complex chromate-chromium film which is impervious to the more common corrosives which attack aluminum. In the laboratory salt spray chamber, commonly employed for testing the effectiveness of aluminum finishes, the finish we have adopted has proved to be equal to or superior to a chromic anodic film on the various aluminum alloys.

New Scratches in Surface Can be Treated by Brushing

The reaction is entirely chemical in nature, and starts as soon as the aluminum is immersed in the solution. The time required to complete

A case history of the jet age . . .

JET PILOT'S STEERING WHEEL FINISHED WITH

PYROXCOTE*

When Pisanko Methods Co. of Ft. Pierce, Florida, undertook the development of jet plane steering wheels, no existing aircraft finish could meet the unusual specifications. Expert chemists of Pyroxylin Products, Inc., devised a special finish for Pisanko which has remarkable properties at extremes of high and low temperatures . . . strength, adhesion, caliper, impact resistance, texture and conductivity.

We have many other "firsts" in our case history files. Perhaps we can be of service in solving *your* problem. For information, write to—

Pyroxylin PRODUCTS, INC., CHICAGO 32

PAOLI, PENNA.

WICHITA, KANS.

*T. M. Reg. U. S. Pat. Off.

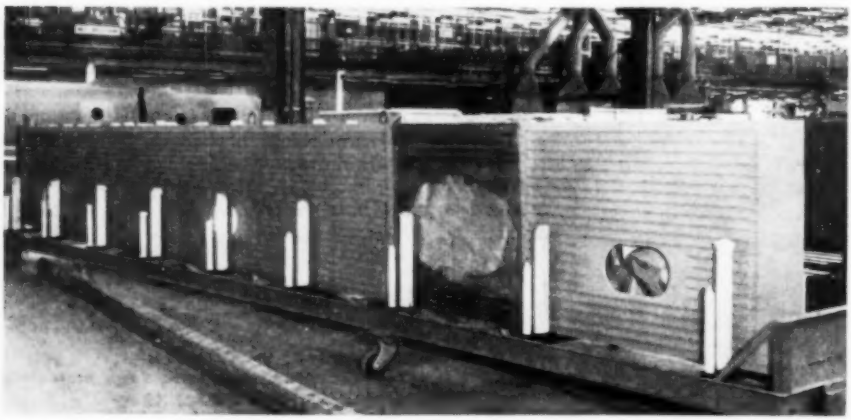
the desired reaction is from four to six minutes. The amount of aluminum involved in the reaction is very small, and the film resulting from the reaction is about 0.00001-in. thick, so it has no practical effect on the most critical of machine or dimensional tolerances. The process does not result in metal embrittlement, the coating formed has good abrasion resistance and may be dyed for identification purposes, and parts may be cold formed after treatment. Dissimilar metal parts (clips, attachments, inserts, etc.) are not affected by the solution and need not be removed during processing.

One feature of the processed finish is that if any treated surfaces are scratched or otherwise damaged, these places may be locally re-treated by merely brushing the solution over the affected area. Re-treatment of the whole part is not necessary.

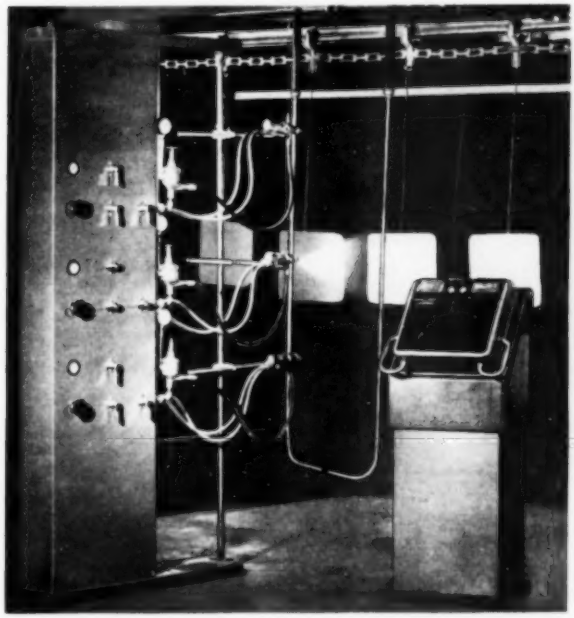
Paint adhesion on the Iridite film is excellent, and for some reason the paint dries more quickly than when put on an anodized surface.

Maintenance of the Iridite solution is simple. Only occasionally is it necessary to make additions of the basic proprietary chemical compound. Small additions of nitric acid are made frequently to keep solution acidity between pH 1.5 and pH 1.7. This pH range is critical to obtain an optimum film coating.

During post-installation cost studies at Lockheed, the conclusion has been reached that replacement of the anodizing process by the chromate conversion process was a logical step. Initial installation costs were much less than would have been required for an anodizing setup of equal work capacity. As an example of these savings, an anodizing setup of the same size would have required the installation of a 10,000 ampere rectifier unit; and current consumption during use of the anodizing process would have been heavy. [*To page 62*]



One of the huge aluminum skin sections (50-ft. long) that made larger surface treating facilities necessary. The trend in aircraft work is toward larger integral components.



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Analyzes your finishing problem, test-runs your products, compiles and demonstrates evidence of savings, then designs adaptation to your operation. You quickly know how *soon* your own Ashdee Electrostatic System *pays for itself!*

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YOUNG BROTHERS CO.
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CLEVELAND 13, OHIO

Estab. 1896

When using the Iridite process, about three times as many parts can be placed in the tank at one time, due to the fact that they need not be properly arranged for making electrical contact. Add this to the fact that this treatment requires only a tenth of the time needed for anodizing, and it becomes apparent that the work capacity of the chromate conversion solution is much greater than that of an anodic solution of equal size.

Cost figures show that during the first nine months of operation at Lockheed, about $40,000 was saved on labor and solution upkeep. The rapidity with which parts can be processed adds to the general flexibility of the process and makes it much easier to meet heavy work schedules.

The Iridite process and its quality requirements are fully covered in government Specs. MIL-C-5541.

Screen Process Convention in St. Louis, Oct. 29-30

Approximately 350 advertisers, agency representatives and printing buyers from the Greater St. Louis area, as guests of the St. Louis Chapter, Screen Process Printing Association, will view an international exhibit of modern silk screen printing at a cocktail party Friday evening, October 29, at Hotel Jefferson. The event precedes the opening, October 30, of the association's sixth annual convention, the "Showboat of Color."

The reception, admission to which is by invitation only, will take place in parlors adjacent to the convention's printing exhibit. Samples submitted by screen processors throughout the world will be displayed in groups, according to their classification—posters, decals, car cards, metal signs, point-of-purchase, glass containers, plastics, printed circuits, textiles and others. Each piece will be tagged to identify its producer.

William N. Fraser, W. N. Fraser Co., is general chairman of the 1954 SPPA Convention, and Robert R. Cramer, G. Cramer Dry Plate Co., is in charge of the arrangements for the host chapter's cocktail party.

Removing Trapped Cleaning Solution

METAL PARTS, hanging from an overhead conveyor as they move through a washing machine, are sometimes of such shape that a quantity of cleaning solution or rinse water is trapped in certain places.

For example, on the casting primer line at Caterpillar Tractor Co. in Peoria, Ill., castings are washed in a hot solution which imparts so much heat that they become dry before reaching the paint booths.

There are some types of castings from which most of the water trapped in pockets can be eliminated by shaking them manually or mechanically, somewhere along the line of travel between the washing machine and the spray booth. However, other castings have relatively deep pockets. In cases like this the trapped water can be removed from deep pockets by using a vacuum hose which sucks such cavities sufficiently dry that resident heat suffices to complete the drying operation.

When parts being processed are cup-shaped or have recesses of one kind or another, into which liquids run, a problem arises with regard to proper drainage. This holds true in actual finishing and in related processing, such as pickling, degreasing, etc. When such parts are being processed, the rinse water should be used just as hot as possible. Parts should be submerged in it until considerable heat is built up. Then when the clean parts

(Continued on page 124)

tough stripping problems?

USE **ECONOSTRIP**

The New Low Cost Paint Stripper

REMOVES THOSE SO-CALLED "IMPOSSIBLE-TO-STRIP" FINISHES IN A MATTER OF SECONDS

- Remarkably effective for removing EPONS, Enamels and Lacquers.
- Will not harm aluminum and other soft metals.
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- Recommended by leading finish manufacturers.

For individual needs Beck Laboratory facilities are available for formulating custom made strippers. Write today for detailed information.

SEND FOR FREE BULLETIN

BECK EQUIPMENT COMPANY

Custom Made Strippers For Every Need

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Two men handle the squeegee which forces process dye through openings of a stencilled screen onto the cloth which is held firmly in position on the work table with a tacky wax.

CASTLE CREEK PRINTS, Inc., Washington, N. J., is one of the country's leading producers of screen prints. The screen printing of textiles is a fascinating procedure yet the full process of print making cannot be seen in the Castle Creek plant alone. Mr. Visitor must step through the door into the Northern Dyeing part of the factory to see gray goods bleached and prepared for printing, and he must return to Northern after the print pat-

Here is a generous peek into a plant where screen process printing has been developed to a high degree of speed and precision. You see not only hand operated squeegees but a special high speed automatic machine with power squeegees and intricate electronic controls which insure the perfect register of as many as eight different colors on one cloth.

[PAGE 66]

Screen Printing Cloth
By Hand and Automatically

terns have been applied at Castle Creek to follow the final finishing operations on the cloth.

Both Hand and Automatic Machine Process Printing

A year ago Castle Creek's part of the factory consisted largely of a big room filled with 60-yard long tables to which cloth is attached while the print designs are applied. Here is where screen printing is done by the traditional hand process. The room is still a busy place as skilled printers work their way along the tables, applying color to cloth through stenciled screens.

Today many Castle Creek prints come from an adjoining section of the plant where a very intricate machine—the first of its kind to operate in the United States—duplicates the hand screening process on a high-volume precision basis.

Development of a machine for making screen prints was a notable achievement. It provided the means for a vast increase in screen print-

One of the stencil screens in position over a continuous strip of fabric being decoratively printed in several colors on a new electronically controlled machine with power squeegee.

ing capacity—a goal that has long been sought by the trade. In addition, it eliminated, almost completely, the problem of waste due to imperfect register of colors. Once the machine has been set, thousands of yards of fabric may be run through accurately.

Why Screen Process Color Printing Is Used

Screen printing continues to be in demand—in spite of the fact that all but a small percent of the total production of textile printing is done on modern, high speed, roller print machines—because it fills a need that is not met by roller printing. *A basic use for the screen print process is in the production of patterns in which the full design —the "repeat," as it is known in the trade—is too large to be applied by the roller method.*

A pattern as long as 115-in. between repeats, for example, is entirely practical with screen printing. On a roller printer this would require engraved rolls of prohibitive size—about 36-in. in diameter. There is also the matter of cost of making engraved rolls. Thousands of yards of fabric must be run in a given pattern to justify the expense of the engraving. A screen stencil, on the other hand, costs but a few dollars and the production of only a little yardage in a given pattern becomes entirely practical.

The cloth to be printed is stretched out on 60-yard tables while process printers force the color through the screen with squeegees. Printed pieces are suspended from the racks above for air-drying.

Flexibility and Variety of Color Combinations

Still another consideration is the flexibility of color combinations possible with screen printing. With hand screens, any desired number of colors can be applied, and a relatively large amount of process dye is transferred to the cloth. This results in a pattern of superior brilliance. Roller print machines, although they are adaptable, do not have the versatility provided by the screen printing process.

Installation of the screen print machine at Castle Creek has not materially reduced the volume of work in the hand printing room.

Screen prints have long been used for table cloths, napkins, draperies and spreads, but now that

Electrostatic Application?

CALL THE MAN FROM JAMESTOWN!

We're specialists in working out the exact formulations required for the electrostatic application of lacquers, enamels, and specialty coatings. In the illustration, automobile window frames are being enameled with Avalex electrostatically at the rate of 950 pieces per hour. This company, at first, had trouble but then they called us in and we worked out a formula to give them proper flow characteristics for this type of finishing. Now one man turns out the work of six hand sprayers. So if you're in the market for a finish to be applied electrostatically, just call the man from Jamestown.

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GAS-PUMP FINISH that really measures up! Excellent spraying characteristics of Du Pont DULUX Enamel mean fast, trouble-free performance on the production line. Rugged DULUX keeps its sparkling gloss for years!

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Chemically engineered to do the job *better.*

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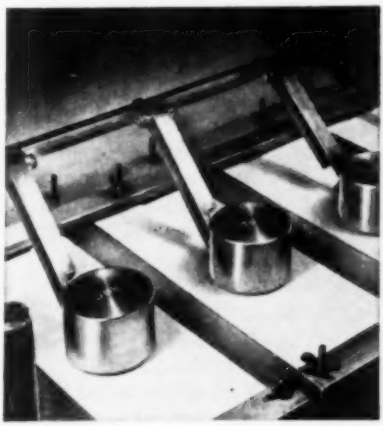
Custom-tailored coat for an outdoor salesman

Outfitting a gas pump for all-weather wear calls for a "tailor-made" finish! On duty 24 hours a day, these silent salesmen get whipped by wintry winds . . . scorched by summer sun . . . soiled by gas, oil and grease spills. Yet year after year they must hold the well-dressed look that pulls the customers in!

A leading manufacturer of service-station equipment has found that a specially formulated Du Pont DULUX Enamel gives his pumps maximum protection and "premium" eye appeal. Durable DULUX stands up to weather extremes and sudden temperature changes without blistering or cracking . . . resists the damaging action of petroleum products. The snappy, practical DULUX colors stay fresh and bright for years . . . sparkle like new after every wipe-down.

Already more than 12,000 Du Pont finish formulas are serving industry. Perhaps a Du Pont finish can help you improve or develop a product —cut your production costs. For complete information contact the Du Pont sales technician in your area, or write E. I. du Pont de Nemours & Co. (Inc.), Finishes Div., Wilmington 98, Delaware.

GLOWING BEAUTY of a Du Pont furniture finish impresses customers . . . breaks down sales resistance.



RUBDOWN TEST. The abrasion resistance of DULUX finishes is measured by constant friction of these weighted glass discs.

the big, colorful patterns are more readily available, these applications are expanding. Screen prints are popular for summertime dresses, skirts and sports shirts. When style is a factor, high speed production is always important, and the new machine turns out perfect prints in large volume quite rapidly. At the same time, for those thousands of applications where the yardage needed in any given pattern is small, the hand print technique is a practical and economical method, so there continues to be a field for both production processes.

Preparation of Framed Screens for Printing

Screen printing, whether it is performed by hand or machine, consists essentially of forcing a viscous dye preparation through a screen stencil onto the cloth. The screen was formerly made of silk —hence the name "silk screen process," frequently used to describe the operation—but synthetics have now largely replaced silk. Many of the screens in the Castle Creek plant are of Orlon or Dacron.*

The screen material is tightly stretched over a heavy wooden frame and is attached to it securely. Then a portion of the design to be reproduced—that part which will be any one color—is transferred to the screen. This may be done by hand painting or photographically, using a special sensitizing coating over the screen.

Actually it is the reverse of the design that is required rather than the design itself, for the end result is to coat the fabric in such a way as to make it impervious to the dye solution except in those parts where the design calls for that particular color. There the screen cloth must be free of any coating so the dye can pass through the fabric.

A separate screen is needed for each color in the design, and extreme accuracy is required to produce a set of stencils in which the colors will be in perfect register.

Two types of dyes are used in screen printing — Indigosols and Rapidogen dyes. The Indigosols—a type of vat dye—are extremely fast to light and to washing; they are preferred for light shades and pastels. Rapidogen dyes are used in the production of darker colors.

The paste is a water-mixed preparation containing the dye and such chemicals as are needed to blend with it to produce a compound of the proper type for screen process application.

Cloth Is Rolled Flat on Sticky Waxed Table Top

When the cloth to be printed comes in, it is rolled out over long tables in the print room. Since there are eight tables in the room, the printers have eight 60-yard pieces to work on at one time.

The tables are covered with a special sticky wax which holds the cloth in place during printing but does not adhere when the cloth is lifted from the table. Adjustable stops, located at specific intervals along the side of each table, provide a means of positioning the screens accurately so the colors will be in absolute register. [*To page 72*]

*Orlon and Dacron are trade names of E. I. DuPont de Nemours & Co.

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Industrial Finishes in Step with the Times

JAMES B. DAY & CO.

CHICAGO 14

With the cloth in position and the dye paste prepared, the printers are ready to start. On all but the smallest prints, two men work at each screen frame. They stand on opposite sides of the table so they can handle the frames readily and operate the squeegee.

Two Men at Squeegee; Step by Step Repeat

A quantity of paste—a dipper full or more—is poured on the screen along one end, and the screen is placed over the cloth. A stop on the screen frame corresponds with the stop on the table and the two must be in contact as the screen is lowered to the cloth. Then the rubber squeegee is moved across the screen from one end to the other to deposit the process dye.

This done, the printers pick up the frame, advance one frame-length, and lower it onto the cloth again. The squeegee operation is repeated and the operators move another frame-length. In this way, step-by-step, the printing progresses along the 60-yard table. Since only one color can be applied at a time, the first printers are followed by others, working with stencil screens for each of the additional colors. As many as ten different colors are sometimes applied.

When printing is completed on a 60-yard piece, the cloth is raised from the table to an overhead rack where it is allowed to dry while another piece is printed. This, in turn, is also suspended from the rack for air drying while a third piece is printed. As many as three or four printed pieces may be racked up across the room before any are removed for oven drying.

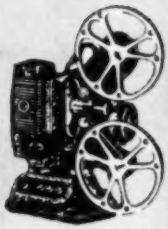
Traveling Drying Oven on Overhead Track

The drying oven is mounted on an overhead track so that it can roll along past the ends of all eight of the 60-yard tables. The top piece of cloth from each of the eight racks is wound off as the oven is moved from table to table, and the ends of the pieces are sewed together to make a continuous length for passage through the steam-heated oven. When the roll of cloth leaves the oven it is ready to be returned to Northern Dyeing for final processing.

Printing Procedure on New Automatic Machine

When the screen printing is done on the new machine rather than by the hand process, 500-yard rolls of cloth are used instead of the 60-yard pieces. As the roll enters the machine, it is coated on the back with a gum arabic solution which causes it to adhere to a continuous rubber belt that serves as a table top for the printing. The belt, bearing the fabric, advances to the first printing position and stops. The screen frame then automatically lowers onto the cloth and a chain driven squeegee moves across the screen, just as is done by hand in the other room.

Pressure of the squeegee on the screen and the number of passes it makes back and forth across the frame are adjustable and may be pre-set to suit the requirements of the particular dye and fabric being



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Uni-Versal Primer has gained such widespread recognition because it anchors itself with such firmness to the metal surface that all normal drawing, blanking or extruding operations can be performed after coating, without disturbing the finish. It provides unusual resistance to salt spray, humidity, abrasion, as well.

Uni-Versal Primer air dries in 15 minutes and is ready to handle in 30 minutes. It can also be force dried, or baked before or after applying a top coat.

Write today for a free working sample of Uni-Versal Primer for tests on your own products.

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LINDEN, N. J.

Screen printed colors are fixed to the fabric in this stainless steel ager.

used. The machine will accommodate eight different screens, and the squeegee mechanism for each one operates individually. If one color needs more passes with the squeegee than another, the belt waits for the operation to be completed before moving the cloth forward to the next position.

Electronic Speed Control; Double Blade Squeegees

This machine, which puts screen process printing on an automatic precision basis, is an amazingly complex piece of equipment with electronic controls and micrometric adjustments governing its various operations. The forward movement of the cloth, for example, is adjustable to 1/256-inch, to insure perfect register of colors. Electronic speed controls enable the belt to start slowly, speed up for most of the travel distance, and then slow down again to the stop, so the cloth will not be stretched in its passage from frame to frame. Similar precision devices regulate the operation of the squeegees, which are of double-blade design. One rubber blade carries the dye paste one direction across the screen and then lifts, allowing the other to bring it back.

Another feature of the machine is its continuous belt cleaner. As the rubber belt returns to starting position, having discharged the printed cloth into the drying oven, it passes through a wash and dry cycle which puts it in condition to again receive the gum arabic treated cloth as it enters the machine.

Continuous Drying in Movable Oven

The oven is an outstanding achievement of efficient operation. Like the oven in the hand-screen room, it is movable, but here there is no need to move from table to table. Movement (provided by mounting the oven on wheels resting on rails) serves only to keep the oven centered with the width of cloth being printed. The fabric passes continuously from the machine, through the oven, and out onto rolls ready for finishing.

The screen-print machine, which cost close to $100,000 installed, was built by an engineering firm in Switzerland, but includes modifications developed by Castle Creek Co.'s engineers. [*To page 76*]

Randolph WHITE BAKING S.G. ENAMEL

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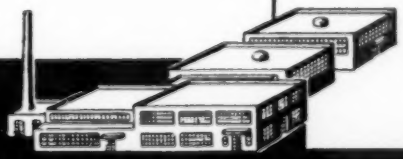

RANDOLPH
PRODUCTS COMPANY
CARLSTADT, NEW JERSEY

DOPES · LACQUERS · ENAMELS · THINNERS

Final Finishing Process on Screen Printed Cloth

All processing of the cloth, both before and after printing, is done by Northern Dyeing Co. The pre-printing operations may include bleaching, singeing, scouring and rinsing.

The finishing steps will vary with the type of dye used and the particular characteristics that are required in the application for which the fabric is intended. With perhaps a few exceptions, the printed cloth is passed first through a big stainless-steel ager where, in an atmosphere of steam and acetic acid and formic acid fumes, the Rapidogen or Indigosol colors are developed and fixed to the fabric.

After aging, the fabrics are washed, dried, brought to width on the tenter and—in most cases, at least—are calendered. They may also be treated with synthetic resins to give wrinkle resistance and crush resistance, such as is provided by the trade-named Nortex finish which Northern developed for the finishing of gengalines and failles.

From a story entitled "Bengalines and Screen Prints" appearing in May-June '54 issue of the Rohm & Haas Reporter put out by Rohm & Haas Co. (manufacturers of plastics, chemicals, synthetic resins and coatings), Washington Square, Philadelphia 5, Penna.

Roller coat those flat sheets. Offset surfaces may also be coated with a special gelatine composition roller.

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"LIQUID ENVELOPE" is non-toxic . . . does not contain dangerous chlorinated solvent. It will not corrode metal walls or ventilating ducts. And it's flame proof and fireproof . . . the dry film will not burn or support combustion.

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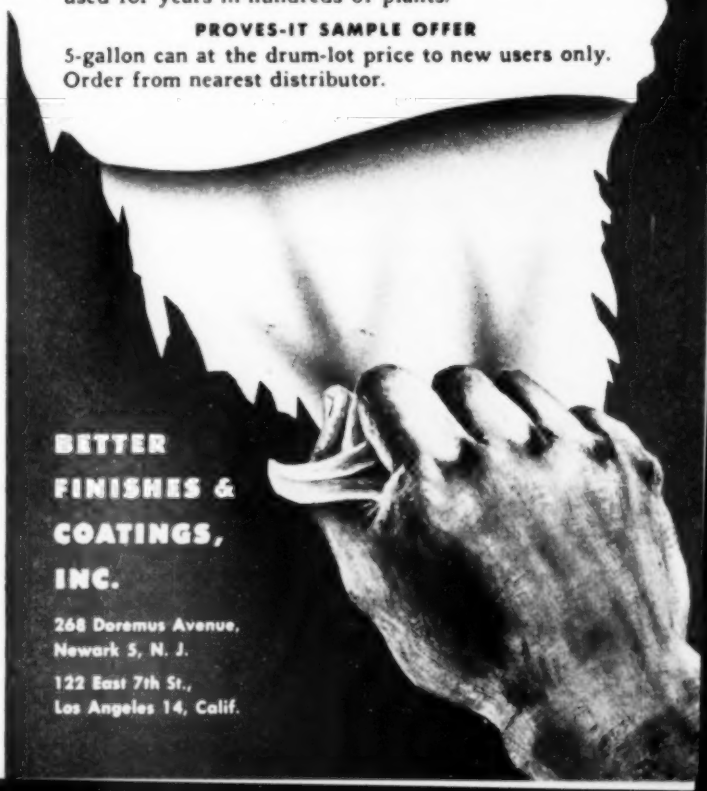
The Dean & Barry Co., Columbus, Ohio
Eastern Spray Equipment c/o Mitchell-Love, Philadelphia, Pa.
dgcomb Steel of New England, Inc., Milford, Conn.
Eley's Newport News, Va.
Ellicott Paint Co., Inc., Buffalo, N. Y.
Finishing Equipment & Compressor Co. Kansas City, Mo.
John Henry Foster Co., Minneapolis, Minn.
Franklin Supply Co., Providence, R. I.
General Spray Equipment Co., Boston, Mass.
H. J. Gettemuller Co., Inc., Baltimore, Md.
Globe Chemical Co., Louisville, Ky.; Cincinnati, O.
The Hubbard Co., San Francisco, Calif.
Kellermann Paint Co., New York, N. Y.
Koehler Rubber & Supply Co., Cleveland, Ohio
The Lea Manufacturing Co., Waterbury, Conn.
The Leonard Co., St. Louis, Mo.
Matson Industrial Supply Co., Grand Rapids, Mich.
Mid States Industrial Corp., Rockford, Ill.
Vic Miner Co., Toledo, Ohio
O'Donohue Sales Co., Milwaukee, Wis.
Paints & Lacquers, Inc., Chicago, Ill.
Pauli & Griffin Co., San Francisco, Calif.
Plastic Paper Co., Los Angeles, Calif.
Porter Paint Co., Louisville, Ky.
Protective Prod. Distributors, Hamburg, N. Y.
R. W. Renton and Co., Cleveland, Ohio
Hugh Russell & Sons, Ltd., Montreal, Can.
Scobell Chemical Co., Rochester, N. Y.
Sprayway Co., Los Angeles, Calif.
Suppiee-Biddle-Stoltz Co., Philadelphia, Pa. (Industrial Division)
Tanner and Co., Indianapolis, Ind.
Tri-State Spray Equipment & Compressor Co., Omaha, Neb.; Rock Island, Ill
In Europe:
Jenson & Nicholsen, Ltd., London, Eng.



BETTER FINISHES & COATINGS, INC.

268 Doremus Avenue, Newark 5, N. J.

122 East 7th St., Los Angeles 14, Calif.

Protective Hand Cream

Can you tell us of any protective coating material that our finisher can use on his hands to offset the damaging effects of turpentine and other materials which are unusually strong?

The constant use of turpentine has caused blisters and serious sores on his hands, and we are eager to find out what can be done to avoid this damage.—*H. Co.*

We refer you to the advertisement on page 85 of Sept. 1954 issue of this magazine.—*Editor.*

Automatic Air-Operated Dip Tanks, Conveyorized

Referring to one of the "Letters from Readers" under the above title, in Sept. issue, page 76, we would appreciate the full name and address of "R.Co." who is interested in equipment listed in the article.

We believe we were one of the first to employ air-draulically operated tanks in conjunction with intermittent operated trolley or cross-rod type of conveyors.

We number among several of our successful installations Oneida, Ltd., and Wright Aeronautical. The tanks were used for precise depth of immersion, period, and rate of withdrawal to remove any clinging tear drops of paint. Perhaps certain of our ideas might be of interest to "R.Co."—*Swenson Associates, Detroit.*

Stirring and Pumping

In the "Letters from Readers" in June 1954 issue, on page 96, we read an article entitled, "Stirring and Pumping Direct from Drum." We are interested. Where is this equipment available?—*T.P.Co.*

Several companies can supply this equipment. In a letter we are giving you their names and addresses.—*Ed.*

Cold Galvanizing

In a previous issue of this magazine, I read an article on cold galvanizing — about a material that is sprayed on and, after a certain drying time, the effect would be that of a galvanized product.

Would you send me the name of the manufacturer of the above mentioned product?—*D. Metal Products Co.*

The article, with the firm's name and address, appeared in July 1952 issue, pages 108 and 109. In a letter we are sending you tear sheets.—*Ed.*

Flow Coat Priming

In the August 1954 issue, there is an article on flow coat priming, beginning on page 44 and ending on page 54. We have tried to locate the Erickson Co., which was given as a source of information for this article, in order to obtain additional information on flow coat priming. I am hoping you will be able to help us by sending us either the address of the

QUALITY THAT SPEAKS FOR ITSELF

This Label is used for the finest clear lacquer yet produced for — Plated Goods — Silver Nitrate Films — Holloware — Cellulose Acetate Butyrate Plastic — Vaporized Metal Coatings — and many others.

NIKOLAS
2105 SILVER LACQUER
• A BUFFING LACQUER •
This lacquer is exceptionally well adapted for silver. It can be used with good results on other metals. Goods lacquered with Nikolas 2105 Silver Lacquer can be successfully engraved.
• • DIRECTIONS • •
Reduce 2 parts lacquer with one part 2105 thinner. Spray with 60 pounds air pressure. Baking at 175 degree Fahrenheit is beneficial.
MANUFACTURED BY
G. J. NIKOLAS & COMPANY., INC.
33-35 GRAND STREET, BROOKLYN, NEW YORK
2800 WASHINGTON BOULEVARD, BELLWOOD, ILLINOIS
MANUFACTURERS OF FINEST LACQUERS SINCE 1895

- **Fast Drying**
- **Water White**
- **Crystal Clear**
- **Non-Discoloring**
- **Excellent Adhesion**
- **Mar-Resistant Hardness**

For Full Information Write—

G. J. NIKOLAS & CO., Inc.

Manufacturers of Finest Lacquers Since 1895

2850 WASHINGTON BLVD.
BELLWOOD, ILLINOIS

33 GRAND ST.
BROOKLYN, N. Y.

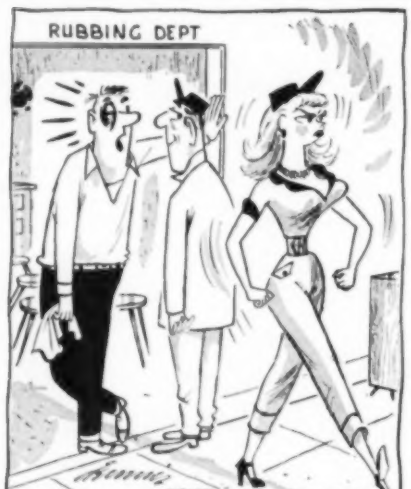
Erikson Mfg. Co. or the desired information. Anything you can do to aid us in this matter will be greatly appreciated.—*V.Elect. Div'n.*

Erickson Mfg. Co. advertises, by full page in two colors, every other month in this magazine, see July issue, page 9, and Sept. issue, page 63. —*Editor.*

What's About "Gyromat"?

Will you please send us full information of the spraying system known as "Gyromat"? One of our customers, the largest steel works in England, is very much interested.—*D. Ltd.*

An illustrated article about the "Gyromat" machine and method of coating surfaces, was published in Jan. 1953 issue of this magazine on pages 106 and 107. For additional information we are referring you to the manufacturer in Fairfield, Conn.—*Editor.*



"I always seem to rub her the wrong way."

Luminous Paints

Please send us the names of suppliers of luminous paints for exterior use, such as on truck bodies. We are interested in the Chicago area only. —*C.C. Co.*

Will you please advise us whether there is any luminous white wall paint manufactured that can be applied without health hazard and, if so, will you please furnish us with the name of a manufacturer in our part of the country (Brooklyn, N.Y.)?—*J.B. & B.*

In a letter we are naming several manufacturers of luminous paints.—*Editor.*

Simulate Brushed Brass on Wood Turnings

We have a specialized finishing problem which our regular suppliers have been unable to solve. Perhaps you can help us locate a specialist.

The problem is to finish wood turnings with durable metallic finishes which will closely simulate brushed brass and brushed silver.—*F.C. Co.*

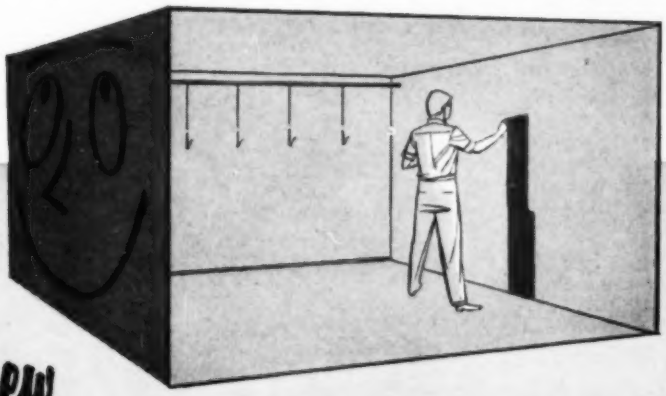
In a letter we are naming advertisers who, we believe, can supply you with the materials and service you need.—*Editor.*

Roller Coating Plywood

Do you have any information on roller coating plywood? We want to finish hollow core flush doors having birch veneer faces. Doors are 6-ft. 8-in., 1⅜-in. thick, and vary in widths from 1-ft. 6-in. to 3-ft.

Present practice is to spray on a sealer coat, then two coats of clear lacquer. [*Continued on page 82*]

Clean spray booths in a matter of minutes



new

DuBOIS PEEL FILMITE

removes dried over-spray from paint spray booths 1000% quicker. By spraying on PEEL FILMITE with regular spray equipment, booths are ready to operate as soon as booth walls are dry.

When over-spray accumulates, score the coating and peel off sheets at a time.

PEEL FILMITE is a high strength plastic film that stays flexible, doesn't age. PEEL FILMITE is safe!

Flame Proof!

Contact DuBois today for complete details on *new PEEL FILMITE.* It cuts costs . . . *cuts labor.*

The DuBOIS Co., Inc.

Dept. F, Cincinnati 3, Ohio Los Angeles 33, Calif.

Serving Industry Since 1920

DuBois Warehouses And Representatives Are Located Coast-To-Coast

Production runs about ten doors an hour. Brush coating is too slow. Spraying ties up our spray booth. Do you think some sort of hand roller, maybe 3-ft. wide, would be an economical and efficient solution to the problem?—*L.T. Co.*

This would not be easy or practical with a hand roller. It might be done with a power-feed roller coating machine, wherein the panels or doors are fed through a machine like a planer or a roll sander and come out completely coated on one side.

One of these roller coating machines could be expensive, unless you have a large quantity of production wherein you will coat flat surfaces. You might find it more economical to install another spray booth and spray the doors on both sides. The spray equipment, unlike the roller coating machine, can be used on a variety of parts and products of all shapes and sizes.

In a letter we are naming some manufacturers of roller coating machines.—*Editor.*

Who Buys Paint Sludge?

We are interested in contacting companies who buy sludge paint wastes.—*A.G.Co.*

In a letter we are naming several companies who make a business of reclaiming paint materials.—*Editor.*

Name Plate Lacquer Here

In the August 1954 issue, page 68, we see another inquiry for "name plate lacquers." We have a complete line of finishes—both enamels and clears—for use in the name plate industry and we would appreciate your sending us the name and address of your reader who is identified as "W. M. & S. Co."—*Maas & Waldstein Co.*

Information supplied.—*Editor.*

Dry Staining Process

On page 48 of July 1954 issue, we notice a short article about the "Amerstain" dry staining process for wood. Please give us the name and address of the Indiana concern that markets this.—*Interchem.*

It's Lehwood Corp., 1703 S. Ironwood Drive, South Bend 14, Indiana. —*Editor.*

Anti-Haze Cleaner-Polish

We would appreciate it if you could send us the name of the manufacturer of "Anti-Haze" cleaner and "Anti-Haze" furniture polish. These prod-

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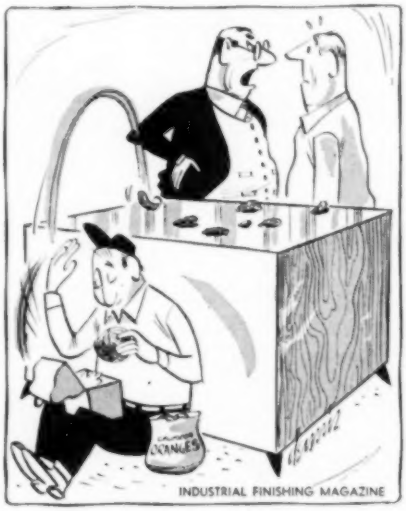
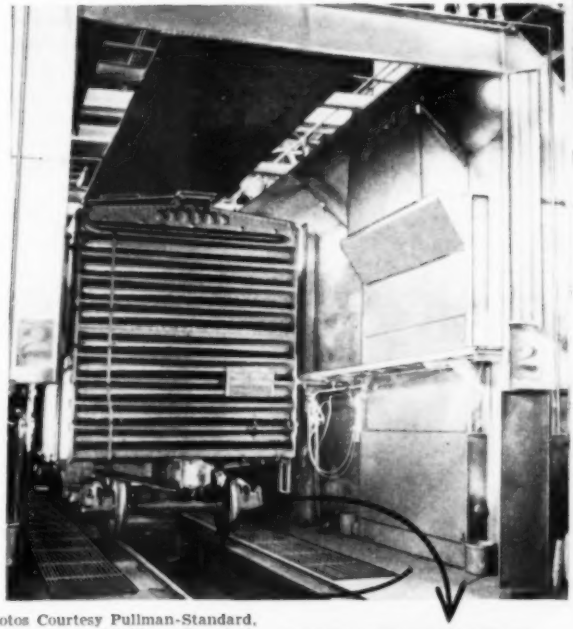


". . . a disgrace to the shop—by far the worse case of orange peel I've ever seen."

RP PAINT ARRESTORS

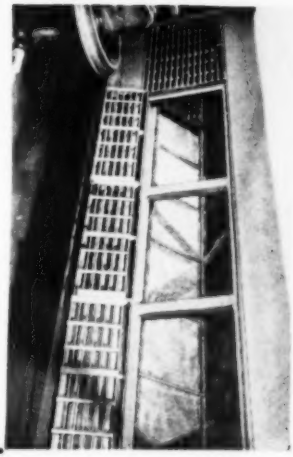
Used in a BIGGER and BETTER WAY!

This interesting installation is one of Pullman-Standard's converted paint spray booths . . illustrating how R P Paint Arrestors are installed below the floor grills . . a space-saving, efficient solution to paint overspray problems.



Photos Courtesy Pullman-Standard, Michigan City, Ind.

R P Paint Arrestors, in this converted down-draft booth, brought three important advantages . . (1) Cut Maintenance costs (2) Cut down-time costs (3) Improved booth performance. YOUR savings can start immediately . . a few hours for installation and a small fraction of the cost of conventional equipment does it.



Write for Free Booklet

Helpful, informative suggestions to solve your overspray control problems. Write today.

RESEARCH PRODUCTS CORPORATION
Dept. 34 • Madison 10, Wisconsin

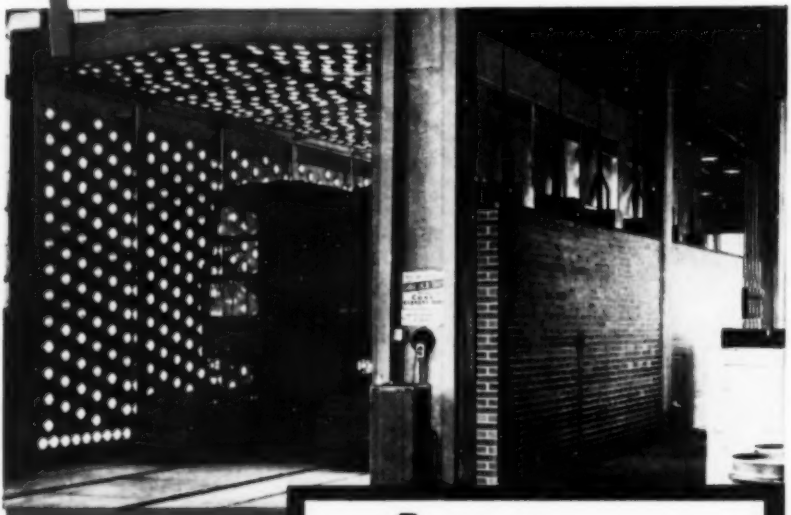
RP . . . PRODUCTS OF RESEARCH

Baking, drying of large equipment and small parts calls for size, versatility

Size and versatility in an oven are a necessity when baking and drying paint on all sizes of Army Engineer equipment.

The Jensen Infrared Lamp Oven below is located at the Army Engineers Depot, Marion, Ohio. It is constructed in seven sections which are controlled individually. The oven is capable of processing large construction machinery such as cranes and graders, or may be used sectionally for smaller pieces; thus offering a real savings in electricity.

Jensen Infrared Lamp Ovens are built to specification for baking, drying, pre-heating, and curing. Write for details.



This Jensen Infrared Oven has 3,016 lamps in its seven individually controlled sections. Work chamber is 11' 6" high, 12' 4" wide, 40' 10" long, and is completely ventilated.

Jensen
SPECIALTIES, INC.

INFRARED OVENS

9337 Freeland Ave., Detroit 28, Mich.

REPRESENTATIVES IN PRINCIPAL CITIES

ucts were mentioned on page 56 of May 1954 issue, in an article called "Rubbing and Polishing Furniture Finishes."—*G.V.*

See Old North Mfg. Co.'s advertisement in June issue, page 109.—*Ed.*

Pearl Essence Wanted

We have a request from a customer for a source of supply for Pearl Essence. Could you please advise to whom we might address our inquiries?—*B. Co.*

In a letter we are naming some advertisers in this magazine who offer pearl essence.—*Editor.*

Disposable Masks

We are working on a problem of spraying a vinyl plastic coating on a mold surface. It is necessary to mask the mold because only a certain area of this surface requires the vinyl coat.

The Binks spray gun people are working with us and have recommended you people as makers of disposable masks for this type operation.

Will you please supply us with any literature you might have covering this situation, or if you have a representative in this vicinity, please have him stop in and see us.—*D.Rubber Div'n.*

Our guess is that you want pre-cut adhesive masks which can be adhered to a surface and later peeled off—something like masking tape, but cut to size and shape. Right? We do not make or sell them (we are publishers) but in a letter we are naming several concerns who make a specialty of supplying masks of this kind in a variety of shapes and sizes.—*Ed.*

"This is the Plant Hospital. Will you be able to take your annual physical tomorrow?"

Dip-Whirl Machines

Please send us names of manufacturers of Dip-Whirl centrifuging machines, as we are investigating the coating of steel parts with rust-preventive finishes.—*A.C.Inc.*

Names and addresses of two manufacturers of these machines are being sent to you by letter.—*Editor.*

Patching and Repairing

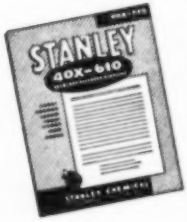
In the March 1954 issue, the article about "Finish Patching and Repairing" by Delbert Bickel that is of much interest to us. Do you have a reprint available of this article? Or, if not, an extra copy of March 1954 issue?

No reprints have been made, but we are sending you two extra copies of the magazine.—*Editor.*

Weatherproofs in ONE OPERATION

Stanley 40X-610 one-package WASH-PRIMER

Now steel or iron parts can keep the weather at bay throughout a year of outdoor storage without topcoating. Reason: Stanley 40X-610. This one-package, one-operation wash primer for spraying, brushing, or dipping forms a weather-tight skin that lasts. Its resistance to corrosion and rust creep is excellent. And Stanley 40X-610 may be used with most topcoats. Find out more about this low-cost, easy-to-apply outdoor protection . . . write today for the new bulletin on Stanley 40X-610 to: Stanley Chemical Company, 41 Berlin Street, East Berlin, Connecticut.



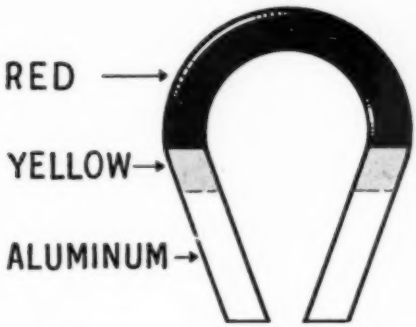
LACQUERS
JAPANS
SYNTHETICS

ENAMELS

STANLEY CHEMICAL

To Keep Same Level of Paint in Tank

By means of racks and a small tank, we hand dip small magnets to give them two or more colors, as shown in the drawing. This break or sharp line of division between colors requires an accurate paint level in order to maintain the correct color spacing.



One of the items we paint by dipping.

As we are now set up, the level is maintained by frequently adding paint. It is necessary to do this about 25 times a day and then stir the paint in the tank. A great deal of time is thus consumed.

We are therefore, interested in an arrangement which would permit raising the paint level in the tank by a simpler means. We are looking for a set-up with a cylinder or "ballon" that would hold about a quart of paint which could be forced into the tank by merely exerting hand pressure on it. If you know of anything along this line, or have other suggestions, would you please contact us? —*S. S. Co.*

Your question would be easier to answer if I knew the dimensions of your tank. . . . Any tank that could

have its level controlled by a quart of material is certainly rather small.

I visualize a rather shallow, sheet-metal tank, probably resting on a table or bench for convenient dipping. The parts are set up on racks, and lowered into the tank by hand, with the edge of the rack finally resting on the sides of the tank. This controls the color spacing as long as the level of the paint is constant. I certainly agree that constant adding and stirring of paint into such a tank would be a nuisance and very costly.

Well, there is a very simple and inexpensive way to keep both the level and the viscosity of the paint constant for weeks on end. Moreover, it requires a minimum of adjustment. With a little ingenuity it can be adapted to almost any size or shape of dipping tank.

First, clean out the tank and drill a small hole either in the bottom or in one of the sides close to the bottom. The purpose of the hole is to hold a fitting, which can be a pipe nipple, a piece of copper tubing, etc. The size of the hole will depend on the size of the fitting and the method of inserting it. If the walls of the tank are sufficiently heavy, the hole can be threaded for a pipe nipple; otherwise, the fitting will have to be soldered or brazed in place. The in-

side diameter of the fittings will depend on the rate of flow required and the viscosity of the paint; anything from ¼ to ¾-in. will be practical.

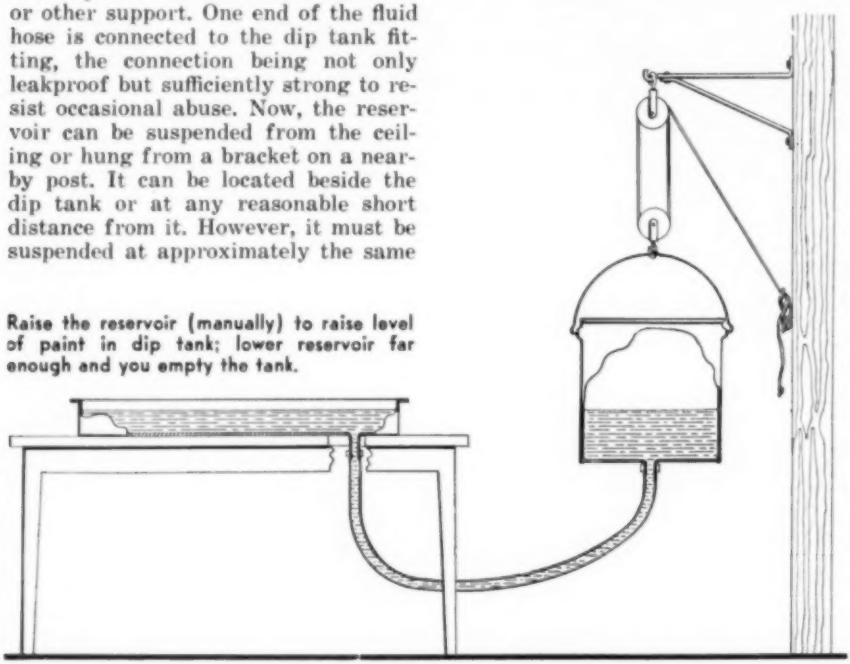
The next step is to insert the same kind of fitting in the bottom of a 5-gallon pail or similar container, which we will refer to as our "reservoir". Incidentally, the reservoir should be large enough to hold both the reserve supply and the contents of the dip-tank. Although this is not absolutely necessary, the advantage of it will be seen presently.

We will next need a length of flexible tubing, such as Tygon or some regular sprayer's fluid hose. Length will depend on the distance from tank to reservoir; and diameter will depend on whether the hose is slipped over the plain fittings, or the connection is made with treaded couplings.

We are now ready for assembly. The dip tank is mounted on a table or other support. One end of the fluid hose is connected to the dip tank fitting, the connection being not only leakproof but sufficiently strong to resist occasional abuse. Now, the reservoir can be suspended from the ceiling or hung from a bracket on a nearby post. It can be located beside the dip tank or at any reasonable short distance from it. However, it must be suspended at approximately the same height as the dip tank, with provisions made to raise or lower it a foot or two above and below the dip tank. Raising it can be accomplished by means of a small chain hoist, a turnbuckle, or a small block and tackle. The other end of the fluid hose is secured in the same manner to the reservoir fitting.

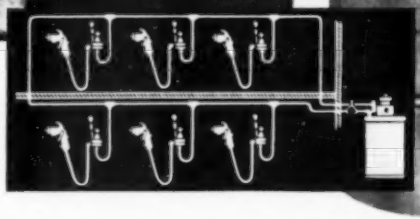
When ready, the reservoir is lowered to the ground and filled with freshly mixed enamel. As the filled reservoir is raised from the floor, enamel will flow into the dip tank. When the proper level is reached the reservoir is secured at that level. As more paint is demanded the reservoir is raised slightly. As long as care is used in raising the reservoir, this system cannot overflow.

The reservoir serves two purposes. First, since the liquid in both containers will always seek a common level,



Raise the reservoir (manually) to raise level of paint in dip tank; lower reservoir far enough and you empty the tank.

Supply 6 spray booths with one Versatal pump!



The Versatal Full Circulating System

Shown here operating on two floors from a single mixing room source, this full circulating system saves you time and money . . . gives uniform quality of finishing.

Pump paint direct from mixing room to spray booths!

With a Versatal Full Circulating System, you can serve as many as six spray heads from one Versatal Pump . . . cut paint handling in half . . . eliminate delays, downtime, mis-matching, and fire hazards.

Alemite Versatal Pumps deliver up to 27 *gallons per minute* . . . and they require less maintenance. Self-adjusting piston is self-oiling. Open frame design separates pump from air motor – no fouling. Available in 22 different models, with 4½" or 6" air motors.

FREE idea book

How Versatal methods can help solve your production problems. Write Alemite, Dept. L-104, 1830 Diversey Parkway, Chicago 14, Illinois.

A PRODUCT OF SW STEWART WARNER

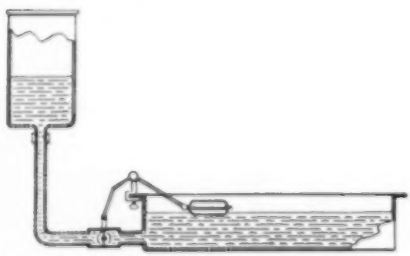
ALEMITE Versatal SPRAY-PUMP EQUIPMENT

it reduces the necessity of such frequent adjustments of level. Second, the simple raising of the reservoir will replenish the supply of paint in the tank as long as any paint remains in the reservoir. Moreover, merely lowering the reservoir to the floor will cause all of the paint in the dip tank to drain back into the reservoir, where viscosity can be adjusted more easily.

Naturally, the reservoir should have a cover, but *the cover must not be airtight.* If you want to make the reservoir really fancy, it could be equipped with a small power-driven agitator, to save stirring.—*Geo. A. Conrad.*

I have what I believe to be a very simple method of keeping the paint in your dip tank at a constant level. Of course, I don't have all the information from you, but at least a variation of my solution should give you the desired results.

I would get a reservoir tank to hold a quart or gallon, as your requirements dictate, or at any rate to hold one day's refill. This should be mounted about one foot above the top level of the dip tank. A pipe of about ¾-in. in diameter would connect the bottom of the reservoir to the middle of the dip tank but the distance from the top level of the dip tank to this pipe inlet should be less than the height of the reservoir over the top level of the dip tank. This is stipulated so that if the paint in the reservoir is properly mixed and stirred no further stirring would be necessary, as the dipping action in the tank will provide enough agitation.



Float device controls paint level in tank.

A simple check valve could be put in the pipe line from the reservoir to the tank, opening toward the reservoir. This could be operated manually, or a pivoted float of polished chrome could be placed so that as the float goes down the check valve opens and as the float goes up the check valve closes. Polished chrome is specified for the float as it has little or no paint adhesion and is easily cleaned with thinners. No methylene chloride strippers should be used for this, as the chloride would tend to strip the chrome plate.

A rough sketch of what I have in mind is shown herewith. I hope this helps to solve your problem.—*Norman I. Gaynes.*

Can Dry Wood Finishes Faster by Infrared?

The article in September issue, "Finishing Fine Office Furniture", by Joe Neukam is interesting.

In view of the long cycles required to finish the desks, and inasmuch as much shorter cycles are possible, it occurs to us to call certain facts to your attention, in case you wish to publish same.

In checking the times reported in the article for air drying, standout and oven drying, it appears that ten hours overall drying time is necessary with the methods used at the Jasper factory.

Recently we completed a series of tests on wood cabinets, in which stains, fillers, sealers and lacquer coats were all dried in an infrared oven. Two coats of lacquer were used. The overall time required for oven drying, standout and cool down, was approximately 2½ hours.

In regard to the finishing of desks,

USE
Electro-Cold STRIPPER

Strips in Seconds

NONINFLAMMABLE
NONINJURIOUS

Removes hard baked-on enamels, primers, wrinkles, hammers, synthetics, japans, and 3M Scotchlite in seconds in most cases, and minutes in others. *The finish literally pops off!* There's no delay in getting metal items back in production when ELECTRO COLD STRIPPER is used.

It is safe, non-inflammable and requires no heat. Used by leading industrial concerns and Government agencies. TRY IT!

Write for samples—or order 5 gallons at drum price.

ALLIED FINISHING SPECIALTIES CO.
2641 W. GRAND AVENUE • CHICAGO 12, ILLINOIS

DIRECT PRESSURE CAN FILLER—

The machine shown is designed to fill a range of containers from 1 pint to 5 gallons inclusive, with almost any liquid that will flow readily through a 1½" pipe.

The beam scale has a gross capacity of 70 pounds, and can be supplied with flat or roller platforms, having electrical or mechanical valve tripping devices.

The semi-automatic valve is mounted on a 14" nipple, making it fully adjustable both vertically and horizontally. Valves are made of bronze (also tinned), cast iron and special alloys to suit specific conditions. Nozzles from 1½" to ¼" I. D. to fit each capacity container opening are supplied, one with each machine, others at extra cost. Valve and switch can be supplied with explosion proof housing, if needed.

The rectangular welded angle iron frames are 3 feet in height and have dome-type casters at the floor. Two or more frames placed together, allow a single operator to double his capacity with sluggish liquids, and also when filling larger cans.

Descriptive leaflet on request.

THE VOL-U-METER CO., P. O. Box 54, Buffalo 16, N. Y.

as described in the article, we believe that comparable schedules could be set up, assuming that the desks could be turned 90° on the conveyor to allow better radiation of all surfaces.

In lieu of the interest in doing things faster, saving floor space, and reducing overall costs, it seems to us that the wood finishing industry would have a greater interest in the infrared method of drying. We will be glad to communicate with any readers who are interested.—*Paul H. Krum, Fostoria Pressed Steel Corp.*

Lacquered Plywood Panels Waxed by Machine

We have a number of customers who are steelwooling and waxing lacquer coated 4x8-ft. plywood panels, and they are doing it by hand. I understand there is someone who makes a machine that gives a steelwool rubbing effect, and the panels are fed through this machine like you would feed panels through a power feed drum sander. I also understand that this machine, instead of using steelwool, uses some type of a brush arrangement.

We are eager to get information on manufacturers that make this type of equipment.—*B.T.Co.*

We have conducted tests on a machine for waxing plywood panels. However, our previous problem covered applying wax to the panels which, in turn, raised the grain and required brushing to correct condition.

We have a laboratory service and we would be glad to work with you on this problem, and suggest that you forward about 18 samples, one foot square, together with a sample of the desired finish. It might also be well if you forwarded some of the wax so that we can conduct experiments to determine the best brushing method of duplicating your desired finish. Upon receipt of the samples from you we will schedule this on our laboratory machine.

We thank you for writing to us as we are interested in all types of brushing machine applications.—*The Fuller Brush Co., Machine Division.*

Editor's Note: This company has sent us an illustrated bulletin showing a number of special power brushing machines now in use in various industries.

To our knowledge, our rubbing machine are not being used with steelwool. In practically every instance, the users of Curtis long-stroke power rubbing machines employ a rubbing pad with pumice being used as a rubbing medium.

We have no information relative to the manufacturer of a machine that uses a brush arrangement with a feed through mechanism similar to a drum sander. If you ultimately learn the identity of this company, we would be interested in receiving this information.

We have already advised two manufacturers of plywood that we believe our rubbing machine can be designed and built to operate with a conveyor feed so that 4x8-ft. panels can be fed through the unit in much the same manner as a drum sander.

It is conceivable that the use of rubbing pads and a rubbing medium like pumice, or rubbing compound, would be much better than is needed for the commercial treatment of pre-finished panels. We are willing, however, to consider adapting our present machines to this problem, or cooperating toward the building of any equipment necessary for this particular operation.—*Curtis Machine Corp.*

Good finishes don't just happen by chance. Knowledge, experience and care are required.

Functional Finishes!

If you require your coatings to accomplish some specific task — something beyond mere ornamental appearance or average longevity . . .

We make ACRYLIC, ALKYD, CELLULOSIC and VINYLOID coatings for a very wide range of specialized industrial applications.

TRY US!

• THE VARNISH PRODUCTS COMPANY

5206 Harvard Avenue, Cleveland, Ohio

RONCI SPEEDIP WHIRL ENAMELER

Made in Two Sizes, R-100 and R-200 Capacity 312-cu.in. and 1206-cu.in.

IDEAL FOR LACQUERING AND ENAMELING SMALL PARTS UP TO 7-IN. IN LENGTH

CUTS COSTS, SAVES UP TO 80% OF MATERIAL

Carries up to 75-lbs. per load, and up to 30 loads per hour can be coated with lacquer or enamel in these machines. All operations are within the machine. Dipping tank is raised, submerging the parts in the basket, and then lowered and the parts whirled, throwing off excess material. No additional outside tanks required; no cleaning necessary when changing colors; no loss of material.

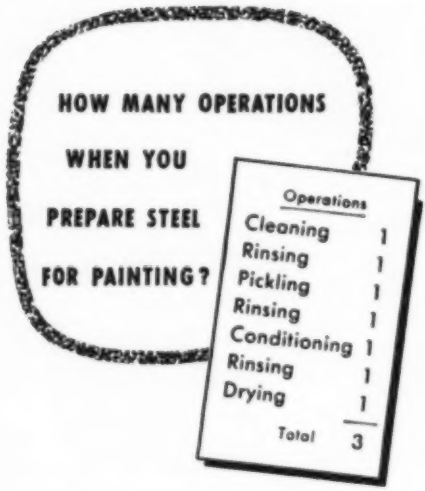
Prompt Deliveries

Write for further information and submit samples to be coated.

RONCI MACHINE COMPANY

A Division of F. Ronci Co., Inc.

2 ATLANTIC BOULEVARD CENTREDALE II, R. I.



What's wrong with that addition? How can seven operations add up to three?

It's easy when Oakite Composition No. 33 removes rust or heat scale *at the same time* it removes oil *at the same time* it prepares steel for lasting paint adhesion.

By combining cleaning, pickling and paint conditioning into one operation—and eliminating two rinses—you save the time, tanks and solution for four operations.

FREE For booklet describing the Oakite Composition No. 33 process, write to Oakite Products, Inc., 32F Rector Street, New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE
Technical Service Representatives in Principal Cities of U. S. and Canada

Apply Wrinkle Enamels Electrostatically?

Please send us any available information on applying wrinkle paints with electrostatic spray; also the name or names of any manufacturer who is using this method. If possible, please state type of equipment being used.—*E. L. Co.*

The spraying of wrinkle enamel in electrostatic spray systems does not present any particular difficulties of either application or formulation. Many companies, particularly those in the business machines field, have been using this method of applying wrinkle for years, with outstanding success.

As a matter of fact, there are a number of factors which make the electrostatic method particularly advantageous for wrinkle finishes. None of the virtues of toughness, adhesion, low light reflectivity, or concealing defects, for which wrinkle is noted, need to be sacrificed in formulating for such a system. Moreover, the more intricate the part the more even the application, and thus the resulting pattern—something very difficult to obtain by hand. Once adjusted to the work, there are few if any rejects.

The most important advantage, to most companies, is in the cost department. It is common knowledge that properly designed electrostatic systems produce outstanding savings of both material and labor. It is also a fact that wrinkle enamels do require a somewhat heavier coat than nontextured finishes, as well as some slight skill at the spray gun. It therefore follows that when wrinkle enamels are sprayed electrostatically, the saving in both categories is even more pronounced.

Formulating wrinkles for this purpose presents no particular difficulties. However, there are a few factors involved that need to be considered.

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PIONEERS IN ENGINEERING, MANUFACTURE AND INSTALLATION OF

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Likewise, there are a few recommendations that contribute to better results. Generally speaking, the object is to deposit adequate material for film-forming on the work, and have it deposited there in a sufficiently wet film. Since the electrostatic system employs little or no air for atomization, as well as lower fluid pressures, this is generally accomplished by formulating for high solids, low viscosity, plus a carefully blended solvent. Oleoresinous wrinkles lend themselves to this end better than the more viscous alkyds, in most cases. Likewise, solvent blends of the lacquer type are the most suitable. A viscosity of not over 50 seconds, as measured on a No. 4 Ford cup, preferably less, seems to work best.

As with any system, whether manual or automatic, certain adjustments must be made to compensate for the shape of the parts, the distance from the spray guns, etc. While the writer's knowledge on this subject has been limited to the Ransburg No. 1 process, there is no reason to anticipate any difficulty with other systems. Arrangements are being made to extend the study of wrinkle application to other installations. When completed, the results and knowledge obtained will be made available to wrinkle licensees and users.—*Geo. A. Conrad, New Wrinkle, Inc., Eastern Sales & Service.*

Central Paint Names Sharer as Eastern Representative

Central Paint & Varnish Works, Brooklyn, N. Y., has appointed A. Jackson Sharer as sales and finishing specialist in the company's industrial division. Mr. Sharer's territory includes Connecticut, Westchester and the Bronx.

Plugs to Mask Tapped Holes Before Spraying

SOMETIMES it is possible to avoid masking holes against overspray by applying the finish coats before the holes are drilled and tapped. Many of the new finish materials make this procedure possible as well as the forming of sharp bends in sheet metal after it has been painted.

However, in some instances the holes in surfaces to be painted must be masked. For intermittent and limited production, ordinary bottle corks may be used to shield the interiors of these holes—tapped or otherwise. But for mass production on a standardized product, especially if the holes are tapped, it will be found that corks soon become worn, broken and generally ineffective.

For repeated masking of large numbers of holes, precision made aluminum alloy plugs will do an excellent job and will last indefinitely. These plugs can be made with a groove immediately above the inside end of the plug to hold a thin rubber washer as shown in the drawing. This washer is slightly larger in diameter that the small inside end of the plug, but smaller in diameter than the shoulder of the plug which rests against the surface surrounding the hole.

The rubber washer accomplishes two purposes. First it gives added protection against overspray contacting the inside threaded surface of the hole. Second, it provides sufficient friction to hold the plug firmly in the

Developed for surface finishing small hand tools, machine is equipped for mechanical holding or magnetic chuck, operated by an electro-hydraulic system.

Spindle of single roll will accommodate buffs from 3″ to 12″ in dia. Work area with mechanical holding fixtures is 38″ x 24″; with magnetic chuck, 38″ x 14″.

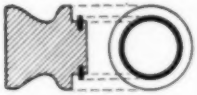
Write for Bulletin 206

CLAIR

MANUFACTURING CO., INC.

Specialized Machine Equipment For Glazing and Polishing Operations

OLEAN, N. Y.



Suggested metal plug.

hole, even when the product is suspended from an overhead conveyor, with the hole at the underside. This type of plug is especially useful in masking openings in metal castings.—*Mr. Z. X.*

Metalwash Machinery Exhibit at Metal Show in Chicago

Metalwash Machinery Corp., 901 North Ave., Elizabeth 4, N. J., introduces a new 20-page full-line catalog of machinery for metal parts processing in a novel tie-in with its 46-ft. booth at the Metals Show in Chicago, November 1-5.

The Metalwash exhibit, a giant spectacular one consisting of flashing lights and giant motion displays, offers the visitor a giant size preview, page by page, of the new Metalwash catalog. In the presentation 122 different types of processing machines are described, illustrated, or demonstrated.

Metalwash will have a full-size Flat Belt Wash and Dry machine and a scale model Conveyorized Degreaser on the floor of the booth, both operating. The Metalwish exhibit will be in Booth 1467.

Oakite to Feature New Materials at Metal Exposition

New materials introduced during the past year by the company's product development laboratory will be featured by Oakite Products, Inc., at Booth 1601 at the metal show in Chicago, Nov. 1-5.

Reflecting the company's continuing research in the fields of cleaning, metalworking, pickling and rust removing, the new compounds include Oakite Pickle Control No. 5, a liquid inhibitor for pickling solutions that develops its own foam blanket; Oakite Rustripper, an alkaline rust remover that does not cause hydrogen embrittlement; Oakite Composition No. 160, which gives a fast, uniform etch to aluminum, while eliminating hard sludge buildup on equipment; Oakite Composition No. 161, designed to clean aluminum in spray washing machines without excessive foaming; and Oakite Composition No. 191, for electrocleaning of copper and its alloys.

F. J. McNally, manager of Oakite's Chicago division, will be in charge. Also in attendance will be technical service representatives H. W. Hart, W. W. Cothran, W. L. Higgs, V. T. Wissen, E. H. Olson, A. A. Becker, R. J. Becker, K. J. Birdwell, T. A. Sailor, and A. H. Green. The men will make their headquarters at the Conrad Hilton.

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INDUSTRIAL FINISHES

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Laboratory controlled to your exact specifications

SERVICE

Orders shipped within 24 hours

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We will not be undersold

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Marked Aisles in Shop For Safety; Convenience

IN EVERY well managed plant there should be clearly marked aisles for foot traffic and trucks. White or yellow lines of suitable width can be painted on the floor, preferably with a rolling traffic marker. If this is not desirable, pressure sensitive tape, in colors, is available. Colored tape can be unrolled and pressed down on the floor.

Aisle lines in the plant are just as necessary and useful as the dividing lines in an automobile parking area. They form a guide for temporary placement of any objects, and prevent storage of parts in process, conveyor racks, etc., from blocking the aisles.

One large concern that employs many people conducts a school of orientation for all new employees. Classes are held in a meeting room on the first floor of the administration building, once each week for several weeks. So that new employees can readily find the classroom and not become confused by a maze of corridors and office doors, a green stripe has been painted in the center of the aisle. This stripe extends from the rear entrance door to the door of the classroom. The new employee is simply instructed to follow the green line. He cannot get lost; this simple device makes it unnecessary to send someone with him to see that he gets to the proper room.

Since smoking in the plant has become more prevalent, one concern has adopted an excellent plan to safeguard critical areas of its factory

Speed The Processing Of . . .

Abrasives
Brushes
Buttons
Carbon
Ceramics
Chemicals
Drugs
Foods
Glass
Leather
Lumber
Paints
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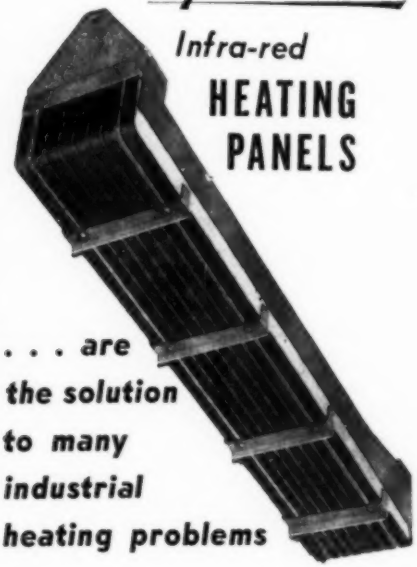
and many others

SYNTRON

Infra-red
HEATING PANELS



. . . are the solution to many industrial heating problems

Radiate a perfectly flat, even pattern of intense infra-red heat with no blind spots. Heat radiates directly on the work—no expensive waste of heat through the back of the panel. Flat, thin strip design permits closer application to the work—reduces heating costs and speeds production. Absence of reflectors reduces installation costs—cuts maintenance time—insures maximum performance on long production runs. No down-time to clean reflectors.

Write today for complete catalogue data—FREE

SYNTRON COMPANY
414 Lexington Avenue Homer City, Penna.

against a possible fire due to smoking. A bright red stripe is painted across the marked off aisles, with several small arrows, also in red, pointing in the direction of the critical area. No one is allowed to smoke beyond these red lines. Workers and visitors appreciate the privileges granted them, and observe the rules of the company for their safety and protection.—*A. R. C.*

Permite Appoints New Man for Nevada and California

C. Stuart McPherson has been appointed as representative, in Northern Nevada and Northern California, for the Permite Paint Division of Aluminum Industries, Inc., Cincinnati, Ohio.

Well known throughout western paint circles, McPherson entered the paint sales field in 1938. Except for a brief tour of duty in the Army Air Corps, 1942-1945, he has been active in this field ever since.

A. L. Johnson New Southern Man for Interchemical Finishes

Arthur L. Johnson has been appointed as southern sales and service representative for Interchemical's Finishes Division.

Mr. Johnson is a graduate of Pratt Institute in Chemical Engineering. He entered the employ of the Murphy Varnish Co. in 1926 as a lacquer chemist. For several years he was in charge of lacquer production and, for 10 years, director of lacquer research. Murphy Varnish Co. was well known for its fine furniture finishes, especially in the piano trade, and was responsible for a number of "Firsts" in furniture finishes, including the original patent on non-grain-raising stains.

When the Murphy Co. was acquired by Interchemical in 1944, Mr. Johnson was assigned to technical service duties, specializing in furniture finishes and Polyfax reproductions, a position he has held until his recent appointment.

With this excellent technical background, Mr. Johnson will be able to provide on-the-spot technical service for Interchemical's Southern customers.

Mr. Johnson will cover North Carolina and adjacent areas. His headquarters will be in High Point, North Carolina.

Are You In A Stew?

About Rising Prices

LET **POTTER**

Save You Money on

THINNERS

POTTER can deliver high quality THINNERS at lowest prices because we are **specialists,** making only thinners.

Here's how it's done:

- Specialization—for over 28 years
- Large Sales Volume
- Streamlined Overhead
- Solvent bought in tank car lots only

Over 600 satisfied users

POTTER'S THINNERS are EASY TO TEST. Just mix with your lacquer in regular way and observe results. If it mixes all right and dries all right —it *is* all right.

With our method of blending solvents, we can easily "Tailor Make" special thinners for difficult applications. Whether you need a special thinner or a regular Potter product—**we can save you money. Mail this Coupon, today!**

POTTER PAINT CO., INC.

CORTLAND 1, N. Y.

THINNER SPECIALISTS

The product we make is:_____

We use Lacquer Thinner for:
☐ Spray ☐ Dip ☐ Cleaning ☐ Other_____

We use Lacquer Thinner on:
☐ Metal ☐ Wood ☐ Other_____

We want it to dry:
☐ Fast ☐ Slow ☐ Medium

Name_____

Address_____

City_____ Zone____ State_____

Cleans Drum Interiors, Four At a Time

The Vol-U-Meter Co., P. O. Box 54, Buffalo 16, N. Y., has developed a machine that mechanically cleans the interiors of as many as four drums at a time—taking drums of 30 to 50 to 110-gallons capacity.

The drums are mounted in a rocking frame and a quantity of cleaning fluid or solvent is poured into each one, with or without some suitable abrasive to produce a scraping action against the interior surfaces. The drums are rotated 28-rpm. while the cradle slowly tips them into a steeply tilted position, first one way and then the other, at the rate of six times a minute.

Since the drums rest on power rollers and no locking mechanism is used, one or more drums can be removed independently of the others without stopping the machine. The open frame and base make it possible to place the machine over a pit, so a container can be positioned to catch used cleaning solutions for settling and re-use.

Colored Tape for Marking; Resistant to Acids and . . .

A new pressure-sensitive film tape —possessing unusual strength although only 2-mils thick—is offered for industrial marking, labeling and decorating use by Minnesota Mining & Mfg. Co., 900 Fauquier St., St. Paul 6, Minn.

The new tape—"Scotch" brand colored film tape No. 850—is made with a polyester film backing that is described as being "superior to most existing plastics in heat and chemical resistance".

Made with red, black or white color pigments in its adhesive, the tape possesses "excellent" resistance to acids, alkalies, ketones, hydrocarbons, esters, and other common solvents, as well as excellent resistance to all sorts of weather conditions.

It is also especially suited for such jobs as protecting fuel cells from rivet abrasion in aircraft; splicing rolls of paper, plastics, and textiles in manufacturing and treating processes; and for various packaging, edging, and reinforcing applications.

3M's laboratory reports that the tape's color stability is "extremely high". Outdoor weathering tests in various sections of the nation over

As the drums rotate, the cradle tilts them alternately one way and then the other to thoroughly clean the interiors with cleaning fluid and perhaps some abrasive or chains.

THINNERS

LOW COST!

- ASK FOR QUOTATIONS
- FORMULATED TO MEET ANY SPECIFICATION
- QUALITY AND UNIFORMITY GUARANTEED

Specialists in Thinners for

- Leather
- Metal Etching
- Polystyrene Plastics

Shipped in Tank Cars, Tank Wagons, Drums or 5 gal. Cans

Synthetic Reducers and Retarders

Write or phone for technical information. Prompt service and deliveries.

ELL-BEE CHEMICAL COMPANY, INC.

Hanover, N. J. Phone WHippany 8-0194 WHippany 8-1277

WATER WHITE LACQUERS & SEALERS HIGH SOLIDS AND NON-YELLOWING

for: — **MODERN FURNITURE**

and all light shades

- LOW COST
- COLD SPRAY
- VARIOUS SHEENS
- EXCELLENT BUILD
- MAR RESISTANT

Mac's FASHION CRISTALITE *LACQUERS and SEALERS*

Are especially formulated for the light blonde or bleached finishes. They are "water white" and do not impart any color to the surface.

They have high solids content and produce excellent body. They will not mar or scratch readily and can be sanded in one hour.

Mac's Cristalite Lacquers are available in various sheens.

Write for samples and descriptive folder.

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

7430 STATE ROAD *"Our 79th Year"* **PHILADELPHIA 36, PA.**

nearly a 2-year period showed no color change whatever, it was pointed out.

The new tape is being offered in ¼-in. to 23-in. standard widths on 72-yard rolls from paper and industrial supply houses nationally.

Sample ¾-in. by 5-yard rolls are available on request from the 3M company.

Power Buffing Machine

A new heavy duty surface finishing machine with a vacuum chuck for processing items of non-magnetic materials has been developed.

The Clair model 203-C is designed for surface finishing automobile trim and name plates for refrigerators, stoves and other appliances. It is useful for buffing items made of brass, copper, silver, plastic, aluminum, wood and some other non-magnetic materials.

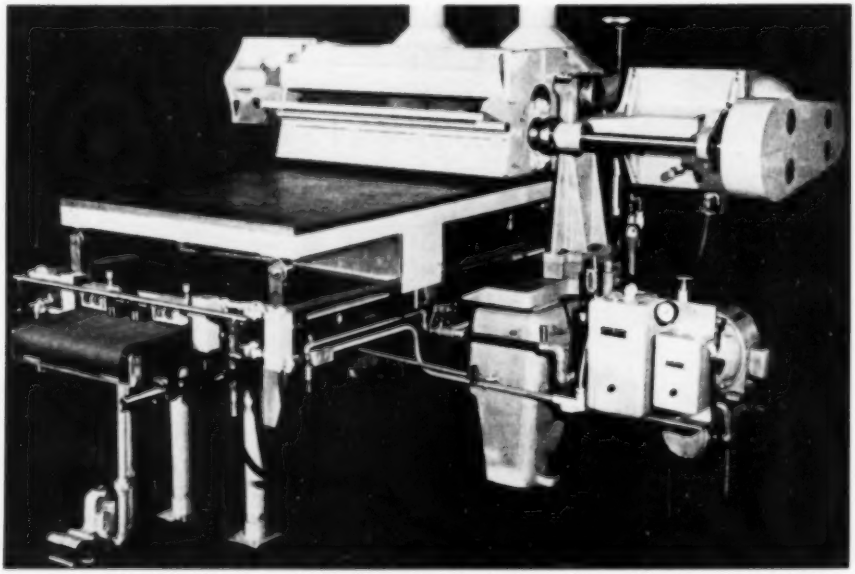
Completely new electrical control circuits offer a wide choice of either automatic or semi-automatic cyclic actuation. Side oscillation mechanism is located at mid-table. . . .

Design of the vacuum chuck is such that even small items can be held and surface finished without interference with coverage over the entire surface. The floating buff will follow curvature of work at any preset contact pressure.

Write for further details to Clair Mfg. Co., Inc., 1008 S. Union St., Olean, N. Y.

Vacuum Coater Features Built-in Photometer

A built-in optical photometer is used to measure coating thickness in a new vacuum coater. The photometer consists of a collimated light source and a sensitive photomultiplier detector. The detector can be placed to receive light reflected from the work or



A vacuum chuck holds the work firmly against bed of machine while it is being buffed.

FOR **FAST** FILLS—SOLID AS SEASONED OAK

8 WOOD COLORS
6 SIZES

DURATITE

WOOD DOUGH

Waterproof — Weatherproof — Plastic

FIRE-RESISTANT

POLISH
SAW
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STAIN, PAINT, OR LACQUER

DURATITE Surfacing Putty for *small* holes, dents, cracks and gouges. You get the same top results DURATITE Wood Dough gives in *large* fills.

Safer... Stays in. Positively will not shrink after fast initial drying.

Faster... Easy to fill even ½" cavities in one application.

Better... One user's tests proved DURATITE outperforms *90* competitive surfacers.

GET THE MOST FOR YOUR MONEY. INSIST ON DURATITE. *Write for literature and prices.*

WEBB PRODUCTS CO. *Manufacturers of fine surfaces and adhesives since 1923*
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For Dust Free Finishes!
BOND TACK CLOTH

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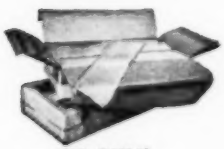
Cut off any size piece to use as needed.



IN BULK
Cut and folded. Ready to use.

STAYS SOFT AND TACKY
A SPECK-FREE FINISH EVERYTIME

Now Available in Rolls or Cut Bulk—White or Gold.
In Three Different Types of Cloth

Get your Tack Cloth packed just the way it's easiest for you to use . . . either in 150 yard rolls of 36" wide cloth or in handy cartons . . . 100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up!

The Cut Bulk size is 18" x 36" . . . folded to 4½" x 18" for ease of handling. ALL BOND TACK CLOTH is **Spontaneous Combustion Proof, Lint-Free** and **Wax Free.** Gives a sparkling speck-free Finish every time. Clean and sanitary. No waste.

TRY THEM and COMPARE RESULTS.
Samples Gladly Sent Upon Request.

BOND CHEMICAL PRODUCTS CO.
"The Tacky Wiper Specialists"
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Also Individually Packed in Glassine Envelopes—144 to the Carton

A Warranty of Satisfaction in Every Carton

transmitted through the work. Thicknesses are measured by recording a change in reflected or transmitted light while the coating is being applied.

Complete details are given in Bulletin 2252, obtainable from the manufacturer, the American Instrument Co., Inc., Silver Springs, Md.

New Metal Cleaning Machine

A special cleaning machine, in which low-flash petroleum type cleaning solvents may be used, has been developed by the Alvey-Ferguson Co.

Small parts may be carried through the machine in baskets on a power driven roller conveyor to pass through a 3-phase cleaning process—two washing operations and a blow-off to remove excess solvent. A petroleum type solvent is used to prevent rust before and during assembly.

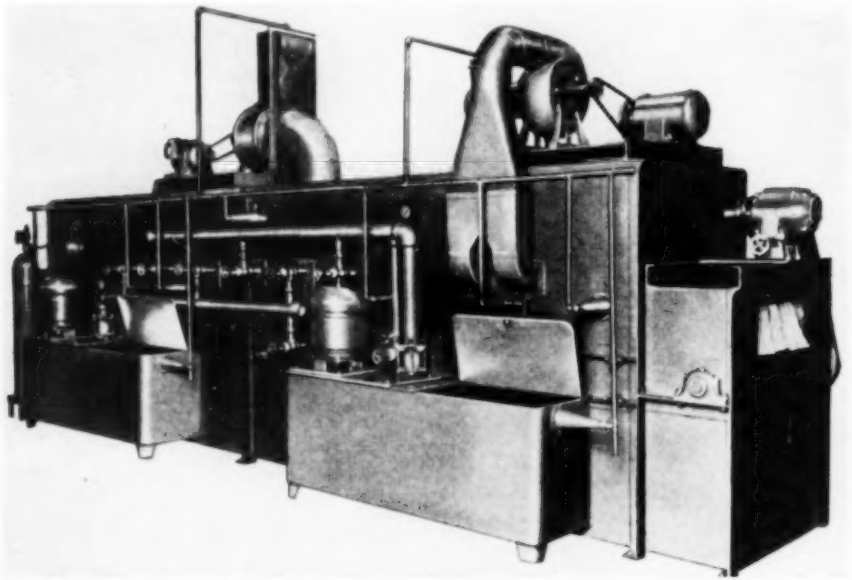
Both emulsion and alkali cleaning solutions can be used in this machine. Solvent filtration is accomplished by a screen tank having two independent screens enabling one screen to be removed for cleaning without interrupting the clean operation.

An automatic fire extinguishing and fire control system is standard equipment when the machine is designed for use with petroleum solvents.

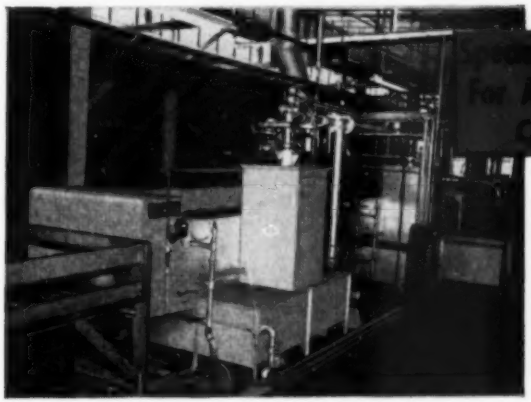
For more information on A-F cleaning and processing machines, write The Alvey-Ferguson Co., 1167 Disney St., Cincinnati 9, Ohio.

New Alkaline Rust Remover

Enthone, Inc., 442 Elm Street, New Haven, Conn., announces the development of a new non-electrolytic alkaline derusting compound. The product, known as Alka-Deox 114, is a free-flowing powder that is used in a concentration from 1 to 3-lb. gal. of water. When a solution of the salts



Cleans metal parts with either petroleum-type solvents or alkali cleaning solutions.



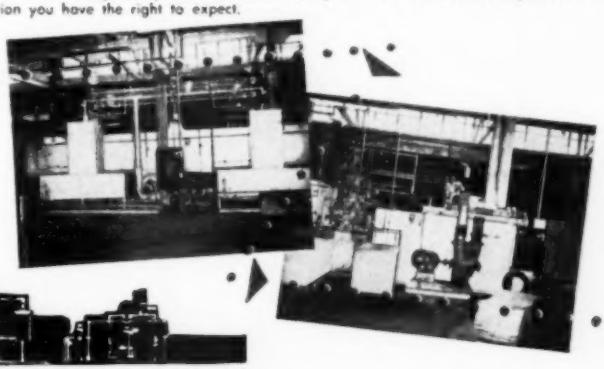
Completely Automatic Installation in Major Appliance Plant

Takes Mill Steel — Cleans It, Applies and Dries the Coating with Speeds Up to 400 Sheets per hour

Here is another example of P-D engineering efficiency. The Power Spray Washer, shown in this completely automatic installation in the plant of a major appliance manufacturer, meets and solves important production problems. A special washer such as this was required to not only **clean** mill steel but to **apply** and **dry** a Dry Film Coat for drawing, stamping, etc. High productivity requirements were met by P-D engineering this washer to handle the flat pieces at speeds up to 400 per hour. This Two Stage Washer and Forced Dry Oven is heated by direct gas fired, vertically mounted heaters.

PETERS-DALTON is an organization of specialists—staffed by men who KNOW the answers to your problems. Power Spray Washers (like the one illustrated) of all sizes, types and required uses, can be developed to meet your needs by P-D. Regardless of size—from a single unit to a **complete** system—an installation by Peters-Dalton can be depended on to give you the service and production you have the right to expect.

The two photographs at the right are actually continuing views of a Two Stage Washing Machine with Blow-Off Section. Flat sheets enter this continuous unit for cleaning and coating and exit completely finished at high speeds to the right.



P-D- one of the world's largest manufacturers of Complete Finishing Systems—also builds . . .

- *Hydro-Whirl Paint Spray Booths*
- *Industrial Washing Equipment*
- *Drying and Baking Ovens*
- *Hydro-Whirl Dust Collecting Systems*

P-D Peters-Dalton INC.
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NEW POWER SPRAY WASHER BULLETIN

We have just published a new Technical Bulletin No. 301 on Power Spray Washers. It is completely informative, profusely illustrated, and contains engineering drawings of many types of Power Spray Washing Machines. We will gladly send you a copy if you will fill out and return this coupon.

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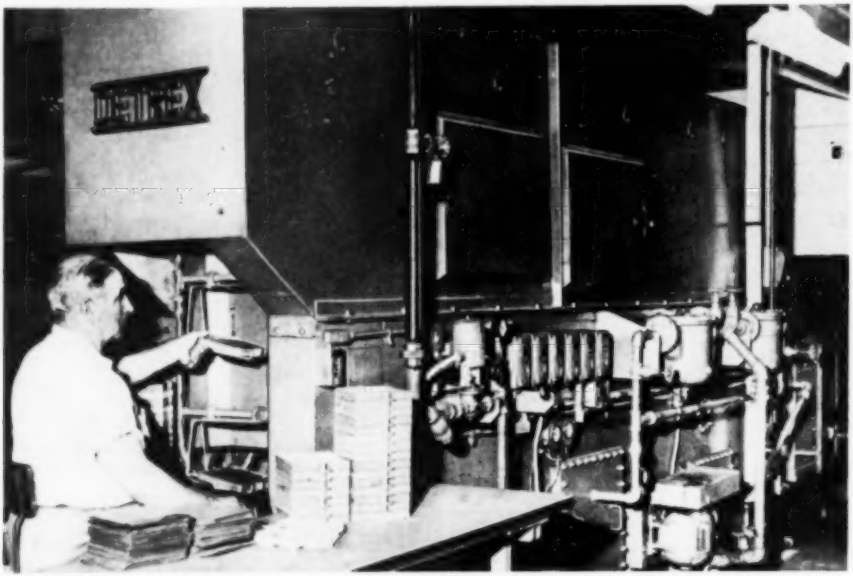


Cleaning of finely-machined electric shaver parts through the use of "silent sound." Here a workman places trays of parts on the conveyor of a Detrex Soniclean machine.

is heated to from 180° F. to the boiling point, rapid removal of rust is accomplished.

Due to its alkaline nature, there is no attack upon the base steel, leaving it clean and bright and because of its high alkalinity, paints, organic coatings and other surface contaminants are removed together with rust.

Decals Resist High Heat

The Nameplate Department of The Meyercord Co., 5323 W. Lake St., Chicago 44, Ill., decalcomania manufacturer, announces availability of three new types of heat resistant decals for industrial application. These decals will resist an extensive list of commercial solvents and, because of their unusual elasticity, will also resist unusual abrasion and accelerated weathering.

Ultrasonic Degreaser Cleans Electric Shaver Parts

The use of a fully-conveyorized ultrasonic metal-cleaning machine in the electric shaver plant of Schick, Inc., Stamford, Conn., has reduced labor costs, according to T. N. Garry, Schick plant manager.

"In addition", he reports, "important costs savings have been realized through the elimination of rejects by cleaning or lack of cleaning of finely-machined shaver parts; and hand brushing, prior to inspection, has been eliminated."

In the Detrex Soniclean process, electrical energy is converted into high-frequency sound waves which thoroughly "scrub" all areas of the parts.

Using a trough-type barium titanate transducer directly immersed in a degreasing solvent, particle acceleration of 1,500,000 times the force

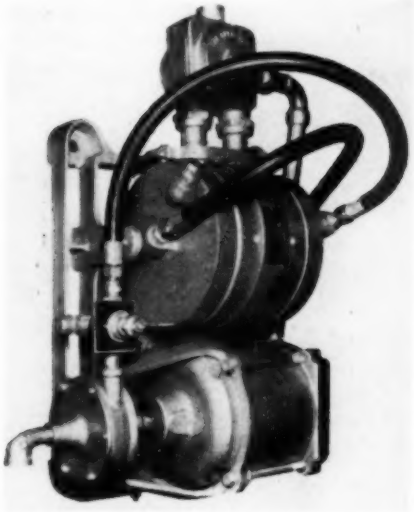
of gravity is achieved in the focal region.

The process, as demonstrated at Schick, can replace many hand brushing or wiping operations to remove soils from cavities, shallow indentations, small holes, and other precision-finished surfaces.

All-Electric Hot Spray Heater

The new all-electric Circaflo 600 Hot Spray Heater, announced by the Spee-Flo Co., 720 Polk Ave., Houston 2, Texas, combines the proved experience of a coil-less heat exchanger with the "paddle wheel" simplicity of an electric powered centrifugal pump designed to handle all types of industrial finishes, regardless of their abrasive content. It requires little or no maintenance, according to the manufacturer.

The Circaflo 600 circulates and heats the paint, maintaining a uniform temperature at the spray gun, and at constant fluid pressure. Air



Spee-Flo Co.'s new paint heater and pump.

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CLEAR LACQUER

For products that can't stand 100% cleaning nor baking.

Has superior
ADHESION, DURABILITY, MILEAGE

Minimum orders accepted.

Agate Lacquer Mfg. Co., Inc.
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NEW PAINT STRIPING IDEA . . . Works Faster, Easier, Better!

MASTER PAINTERS' STRIPING TOOL
Easy to Use as a Fountain Pen

Men in every branch of industry now rely on Master Painters' Paint Striping Tools to aid in turning out cleaner work in a fraction of the time and with a fraction of the effort.

This amazing tool paints straight or curved lines with equal facility. No smears or smudges. Uses any kind of paint, enamel or lacquer. Newest model paints DOUBLE parallel lines . . . wide or narrow or both —*with one operation*. Does a big job in large or small shops.

Write for PICTURE FOLDER with prices and descriptions — all sent FREE.

USE FOR STRIPING
• Furniture • Wallboard
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• Lampshades • Autos
— anything and everything that requires clean, accurate striping with paint, enamel or lacquer.

FREE ENGINEERING SERVICE
If you have any paint striping problem, our staff of experts will be glad to cooperate with you. No cost or obligation.

WENDELL MFG. CO. 4234 N. LINCOLN AVENUE Dept. 910. CHICAGO 18, ILL.

INFRA-RED HEATING TOOL WITH A THOUSAND USES

It's portable, adjustable, and versatile. Three (3) switch control lights any combination of bulbs from one to seven—from 250 Watts to 1,750 Watts by plugging in to any 115 volt outlet.

Now in active use in many large plants that find constant and varied applications for portable infra-red heat.

Low In Cost

Write us now for attractive and instructive catalog.

TRIPPE MFG. COMPANY
218 N. Jefferson Street
Chicago 6, Illinois

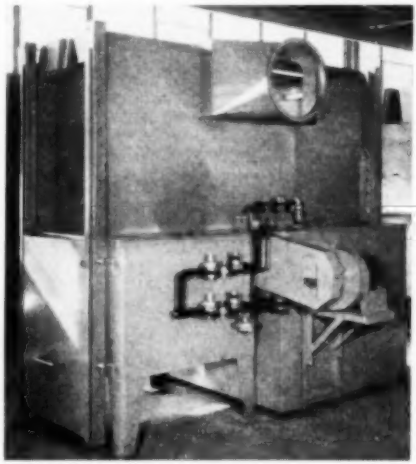
pressure variations do not affect fluid pressure in this unit. Installation is as simple as connecting a hoseline, and full heat is reached in four minutes.

It is available as a fixed or mobile unit for spray booth installation or for plant maintenance.

Kolene Process of Stripping Off Paint and Enamel

The Kolene Process for quickly stripping off paint and baked enamel from metal parts includes the use of a catalyzed, molten, oxidizing salt bath and a Kolene tank fabricated from welded steel plate.

Chemically, the Kolene No. 5 is a hygroscopic alkali base, catalyzed to accelerate and control the chemical oxidizing properties of the bath. Any hooks, fixtures or parts that are not adversely affected by temperatures above 800° F. can be processed in Kolene No. 5. The salt, or stripper, is shipped in non-returnable, light gauge steel drums, and is ready for use as shipped. It is available in either flake or solid form. [*Cont'd on page 110*]



A Kolene No. 5 paint stripping unit.

Delpark FILTERS PAINT

FROM PAINT SPRAY BOOTH WATER AT

FORD MOTOR COMPANY

DALLAS, TEXAS PLANT

● Keeping paint spray booth water clean has presented many difficult problems. These problems are the result of the over-spray in the wash water system which can not be entirely eliminated by hand skimming. By using proper compounds, flocculation of the over-spray paint particles creates a floating matte on the surface of the water. Through the use of automatic skimming and DELPARK *Industrial Filters* complete and continuous removal of the matte is easily accomplished. Costly hand-skimming is eliminated and tank cleaning requirements reduced to a minimum.

By automatic skimming and filtration, at short intervals or continuously, paint particles are constantly removed and not allowed to settle in the spray booth tank or circulate through the system. Plugged pumps and nozzles and paint sludge deposits in the eliminators are no longer a problem.

DELPARK Engineers are available for consultation with customers on the most satisfactory method of delivering the paint and water to the filter.

PATENTS PENDING

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Delpark INDUSTRIAL FILTRATION

INDUSTRIAL FILTRATION COMPANY
96 Industrial Avenue, Lebanon, Indiana

Gentlemen: Please send more information on Paint Spray Booth Applications of DELPARK *Industrial Filters.*

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Company_____

Address_____

City_____ State_____

PROTECT LUNGS *against*
PAINT SPRAY – DUST – FUMES

DUPOR No. 4 RESPIRATOR has big double filters for easy breathing and greatest filtration! Soft rubber face mask gives airtight fit. Patented DUPOR valves bring in clean air—throw off breathed air! Weight 4 oz. Economical! Costs only $2.00 postpaid. Extra set of filters FREE! Order Now!

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LIQUID GLAZE FINISH
For Interior Walls and Equipment
Tile Hard—Mildew and Chemical Proof.
REX INDUSTRIAL PAINT WORKS
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SOUTH FLORIDA TEST SERVICE
EST. 1931
4201 N. W. 7th St. Miami 34, Fla.

Single coats of paint on a thin metal section can be removed after only a few seconds (usually less than 10) of immersion in Kolene No. 5. Multiple coats and/or coats on thick cross sections, may require a few minutes. Naturally, fixtures of extremely thick sections do not heat as quickly as thin sheet metal sections. But the time required for complete paint removal is never more than a few minutes.

Equipment required is in a single unit. A typical installation for batch type operation includes a tank for the Kolene salt bath, which is controlled from a single panel to maintain the operating heat of the bath, and a tank for a room temperature water rinse. The Kolene tank is heated by gas-fired immersion burners with an automatic flame protection system, and automatic ignition. The complete unit is adequately hooded and an efficient ventilation system is included. No toxic or explosive fumes or gases are given off by the Kolene Process. A product of the Kolene Corp., 12890 Westwood Ave., Detroit 23, Michigan.

Phosphate Coating Steel, Zinc For Paint Adhesion

The Fosbond line of the Pennsylvania Salt Mfg. Co. now includes all chemicals necessary to apply iron or zinc phosphate coatings to steel or zinc surfaces for improved paint adhesion. Used in all fields where metals are painted, Fosbond provides durable coatings through fast, trouble-free processing operations on surfaces previously considered expensive to coat because of the time factor involved. Its use in less difficult coating operations speeds the process and reduces production costs.

An important component of the Fosbond Process is Pennsalt's Actidip, a new and unique activating compound. The incorporation of Actidip in alkaline cleaners elimnates costly and inefficient emulsion cleaning previously considered necessary

CLINCO

PIONEERING QUALITY INDUSTRIAL FINISHES SINCE 1928

What Makes Clinton Finishes Outstanding

- EXPERT LABORATORY FORMULATION
- FINEST RAW MATERIALS
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- EXPERIENCED KNOW-HOW
- DEPENDABLE SALES...SERVICE

Clinton personnel assures close cooperation on any finishing problem.
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to refine the crystal size of zinc phosphate coatings. Substantial production and maintenance economies are achieved by providing a coating of highly improved quality while reducing the weight of zinc phosphate coatings by as much as 40%.

Recent additions to the Pennsalt Fosbond line include Fosbond 10, 40, 60, and 61 compounds for phosphating of zinc and the application of heavy zinc coatings to steel. For cleaning and phosphate coating in one operation Fosbond 20 and 22 compounds are available.

PEARL ESSENCE

"Astralucine Brand"
Produces a high luster
on a variety of finishes
Write for your free copy of our informative Technical Bulletin
"Pearl Essence Finishes"
—what they are and how to use them.

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FINISHING OVENS
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CLEVELAND, OHIO

Write for Information & Literature.

Turner Line of Paint Heaters

Turner Paint Heater Co., 8240 Sandy Lane, Cincinnati 24, Ohio, announces two types of paint warmers and a paint heater.

The paint warmers (90° to 110° F.) are designed to permit the use of two colors at the same time. These machines can easily be converted into a one-gun paint heater with a temperature range of 150° to 180° F. They are explosion proof and thermo-switch controlled.

These paint warmers are available in two models—circulating and non-circulating. Several units may be combined for any heating capacity, or for any number of colors.

For higher production efficiency and intermittent operation, Model 100-150 circulating paint heater is offered. It is designed to fit into every painting system, and has a temperature range of 150° to 180° F.

Lacquer Info. Center Will Be at Paint Industries Show

For the fourth successive year a Lacquer Information Center will be a feature of the annual Paint Industries Show in Chicago, November 16-20.

The exhibit is being presented through the cooperative effort of suppliers of raw materials for lacquer and of suppliers of equipment for spraying lacquer. It will depict the latest developments in lacquer technology, formulations, and application.

The companies which are cosponsors of this year's exhibit are: Bede Products, Inc., Carbide & Carbon Chemicals Co., The DeVilbiss Co., Enjay Co., Inc., Hercules Powder Co., Shell Chemical Corp., and the Spee-Flo Company.

Technically trained representatives of the various sponsoring companies will be in attendance at the exhibit.

Send NOW for this FIT-ALL
DRUM PLUG WRENCH
Instantly loosens, tightens 95% all plugs or bungs in steel drums. Has 16" extra-strong steel tubing handle. Wgt. only 2 lbs.
Order 1 or more today!

THOUSANDS IN USE saving time, labor, accidents!
SATISFACTION GUARANTEED..... **$3.30**
Non-Sparking type.....$5.10
Plus Parcel Post
MORSE MFG. CO., Inc.
763 W. Manlius St., E. Syracuse, N. Y.

Make the Roller Coater A Portable Machine

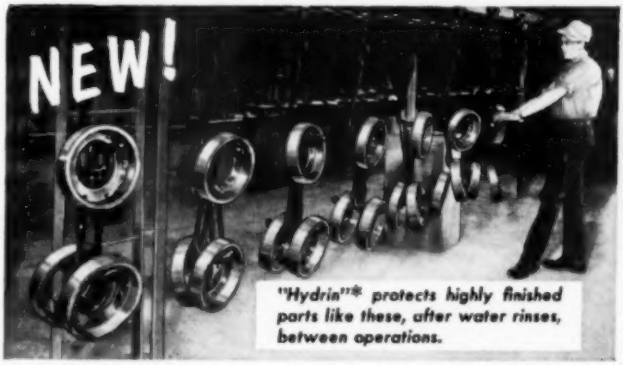
HAVE YOU EVER thought of mounting your roller coater on heavy ballbearing swivel casters? The weight of the machine is usually sufficient to hold it firmly in position for coating operations. The machine must be properly aligned with the conveyor which carries the coated stock through an oven, or through a flock coating machine.

The portability of a caster mounted roller coater offers some advantages. The machine may be rolled back out of the way, so that the floor under it can be properly cleaned. Cleaning time will be reduced and a better job will be accomplished. If two production lines are installed for flat sheet stock, one for painting and the other to spread the adhesive for flock coating, and if these lines are not operated simultaneously, the caster-mounted roller coater can be used interchangeably for both lines—*J. C.*

A self-sealing tape is available to protect your workers' fingers while they are sanding sealer.

See Roller Coating in Action At Metal Show in Chicago

Want to see a modern roller coating machine applying a thin, smooth, uniform coat of paint on flat sheets and ribbons of metal (or paper, plywood, plastic, etc.)? At the National Metal Show in Chicago, Nov. 1-5, visit Exhibit Space No. 1512, occupied by Gasway Corp., 6463 N. Ravenswood Ave., Chicago, Ill. You will see something entertaining, interesting and informative—and it may be useful and profitable to you or your company now or later.



"Hydrin" protects highly finished parts like these, after water rinses, between operations.*

Amazing New Chemical Treatment Prevents Rust Without Oil

Newly-developed "Hydrin," dissolved in water, chemically prevents rust during in-plant operations . . . during and after rinsing . . . prior to painting or packaging. No oiling is necessary. Surfaces may be painted or further rustproofed following the "Hydrin" treatment. "Hydrin" is also especially desirable for inhibiting water used for hydrostatic testing of pumps, tanks, radiators, etc. "Hydrin" will provide interim protection for metal surfaces at a cost of only pennies per gallon.

Write for complete information about "Hydrin." Address Rust Prevention Engineering Service, Nox-Rust, Department IF-104, 333 North Michigan Avenue, Chicago 1, Ill.

**Pat. applied for*

America's Leading Manufacturer of Scientific Rust-Preventive Products

NOX-RUST CHEMICAL CORPORATION
333 North Michigan Avenue, Chicago 1, Illinois
Offices in Principal Cities

Industrial FINISHING Editorial

Paint too Thin to Thin? It May Be a Better Buy!

★ The industrial finishes salesman faced an angry customer.

"That baking enamel you sent us was just like water; we couldn't get any coverage", the customer declared. "Not only that; why, we couldn't thin our enamel more than 10%, whereas the material from your competitor, we thin 25%. That gives us an extra gallon in every four and that is a real saving in cost."

To many an experienced salesman, this complaint is familiar. Unfortunately, however, too few company representatives have the know-how, the courage or the desire to combat this type of complaint. Instead, they dump the whole problem into the lap of their company's laboratory. There, in many instances, unnecessary time and energy are spent on reformulation to put a greater pigment concentration into the product. Naturally, this raises the selling price of the material.

If we will analyze our customer's own statement we would find the answer to the problem. The majority of the old timers in industrial finishing and spraying cared little for such technical terms as "total solids", etc. Their only concern was to thin down a heavy paint and "get something for nothing" when they could show an additional spraying gallon. The fact that all of the solvents added were atomized and later disappeared in the air—this was not given the slightest consideration.

One salesman, having an adequate familiarity with customer psychology, merely returned the material to the laboratory and asked that the viscosity of the enamel be raised about 10%. This was done by adding a heavy alkyd resin solution. It should be noted that actually the hiding power, in this instance, was decreased, But when the enamel was submitted to the formerly irate customer, he became extremely happy and was well satisfied. As far as he was concerned the coverage had been improved.

To many readers this salesman's action may seem to be a highly unethical solution of a customer's problem. In the present increasingly competitive selling of industrial finishes, a salesman's knowledge and quick thinking may sometimes hold a dissatisfied purchaser who would otherwise turn to a competitive product. Unfortunately, if the salesman had attempted to explain "total solids" to some industrial finish buyers he may have been thrown out of the place. It is difficult, if not next to impossible, to tell a finishing foreman or operator that for years he has not known what he was doing. That would be courting disaster.

A manufacturer of bar stool bases recently learned, through the skillful diplomacy of a salesman, that he could spray 100 bases using five gallons of unreduced material, whereas previously he had gotten only 80 bases finished with six spraying gallons (five gallons enamel plus one

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★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

gallon of reducer). This took courage and tact on the part of a salesman who was not afraid to roll up his sleeves and demonstrate.

Not many sprayers or spraying foremen or buyers of finishing materials know that the term "total solids" is a measure of the final solid surface coating compared to the liquid product which has been applied. A material with 50% total solids and low consistency or viscosity will actually give more paint film than a high viscosity material of 40% total solids. Solvents and thinners are only added to make the material easier to apply.

The salesman—who is actually the liaison man between purchaser and formulator—can do much to alleviate the basic problem of past practice versus scientific facts. With strong customer psychology and adequate application and formulation knowledge, he can successfully bridge the gap over many unpleasant and undesirable problems.—*Norman I. Gaynes.*

Maintenance-Engineering Show

The next Plant Maintenance & Engineering Show will be held at the International Amphitheatre, Jan. 24 to 27, 1955. The show, staged for the sixth time, will be the largest in its history. It is now one of the largest industrial expositions in the country.

DeSoto Plant Receives Citation

DeSoto Paint & Varnish Co., Garland, Texas, has been cited by "Factory Management & Maintenance," a McGraw-Hill publication, as one of the four most modern plants built in the United States during the last year.

The magazine presented the paint firm's General Manager, M. H. Warren, with a large parchment scroll citation. The editors of "Factory Management & Maintenance" chose the DeSoto plant because of its modern design and common sense construction which will facilitate future expansion without a great deal of additional capital. For example, the plant, which at present can produce 2,000,000 gallons of paint per year, based on a 40-hour week, could easily expand to a 3,000,000 gallon capacity without installation of a large amount of additional equipment.

The award winning citation is signed by Alfred M. Staehle, publisher, and M. J. Murphy, editor of the McGraw-Hill publication.

The parchment scroll citation is being presented to M. H. Warren, General Manager of DeSoto, by J. H. Cash, Manager of McGraw-Hill's Regional office in Dallas, Texas. Members of DeSoto's staff personnel look on. Reading from left to right (standing): Tom Ingram, Production Superintendent; Doug Hays, Personnel Manager; J. C. Scarborough, Purchasing Agent; Al DaValle, Resin Plant Manager; F. W. Minner, Technical Director; A. M. Holcomb, General Sales Manager; T. H. Lester, Comptroller; J. H. Cash, Manager of McGraw-Hill Regional office in Dallas. Seated is M. H. Warren, Gen. Mgr. DeSoto Paint & Varnish Co.

Attention to Details Heads Off Trouble

How much do you actually know about the cleaning and coating materials and the equipment used to finish your product? Let us assume that you are modernized; have a system and equipment that are only one or two years old. For some time after they were installed great care was exercised; every step and every operation were carefully watched. Controls were checked and changed and rechecked.

New 60-page 1954 catalog on
Paint Testing Instruments
is now available
A copy will be sent on request.
GARDNER LABORATORY, INC.
Bethesda 14, Md.

THERE'S NO SUBSTITUTE FOR DETROIT "TAC" RAGS IN YOUR FINISHING DEPARTMENT

DETROIT "TAC" RAGS are an absolute necessity for cleaning any metal, wood or plastic surface before painting. Removes all dust, lint and sanding particles. Order today through your supplier.
STANDARD OF THE FINISHING INDUSTRY SINCE 1934
DETRO MFG. & SALES CO., INC., CULVER CITY, CALIFORNIA

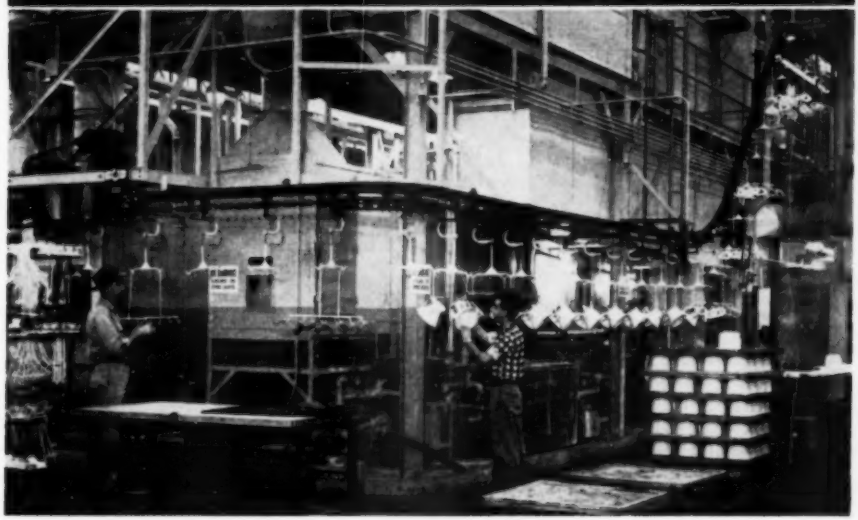
Finally the finish seemed to be uniformly satisfactory. The few rejects that turned up could be attributed to either human or mechanical frailty. Then the man in charge of operations reported that, "We have worked out the bugs and everything is going along all right".

This is when you slipped back into the state of complacency, like putting your tired feet into a pair of old soft shoes after a hard day of walking. The longer this state of complacency exists the less attention you give to the operation. Materials, equipment and controls are taken for granted. Give this state of complacency enough time and nearly everyone around the plant will have forgotten certain essential details about the cleaning setup, the coating materials and the oven.

Thermostatic controls and thermometers on the outside of the washer and ovens can get out of adjustment without anyone knowing or even caring. Any one of several other things can get more or less out of order. Eventually some serious trouble develops. It may be due to improper surface preparation, incorrect atomizing and fluid pressure, faulty baking of the finish, circulation of accumulated dust in the oven, or a number of other things. Those responsible have been known to say, "I just can't figure it out; everything is going along just as it always did. We haven't changed a thing". But this is evidently not the case. Methods, processes, materials, equipment and accessories need supervision; they will not go on giving top service indefinitely—not without some attention.

For a continuous quality, trouble free finish, constant care and checking of materials, equipment and controls are necessary. Everything may be right every time it is checked. When it is properly checked you can feel reasonably sure that it is right, and it will save a lot of trouble.

BETTER FINISHES AT LOWER COST -- THROUGH *Flow Coating by Koch*



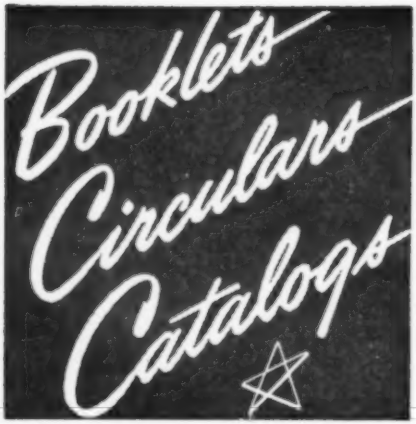
"HEART OF PRODUCTION"

Automatic flow-coating, in our opinion, is inevitable in your plant on products now being dipped or sprayed. From a cost standpoint its advantages over these methods dictate your early study with qualified flow-coating experts.

KOCH designs, fabricates and installs flow-coating equipment for plants large and small, under a single responsibility contract that assures you of a peak-efficiency system at lowest cost. Get more facts now about "Flow-Coating by KOCH!"

WRITE FOR BULLETIN 331

GEORGE **KOCH** SONS, INC.
EVANSVILLE, INDIANA



New "Flow Coating" Book by E. A. Zahn; 300 Pages

Practical information on methods, materials, equipment and accessories for applying paint, enamel or lacquer to the surfaces of various parts and products by the improved flow-coating process, are revealed in E. A. Zahn's new book of 300 pages 5¼x7¾-in. Mr. Zahn, inventor of the Zahn viscosity cup, has had more than 25 years of practical experience in research of industrial finishing application methods. His experience includes the finishing of various household electrical appliances in white enamel.

Chapter heads of the new illustrated book include the following: Industrial Painting Methods, Flow Coating Application, Designing the Flow Coater; Evaluation and Selection of Paint Materials for Flow Coating, Solvents for Flow Coating, Development of Industrial Flow Coating.

The author stresses the present and future possibilities of Automation in Industrial Finishing, and shows how the well designed flow coating setup fits into the picture—giving automatically, on a conveyor, complete coverage, uniform film thickness, a clean smooth finish, and leaving no runs or clinging tear drops on low edges or corners. Speed, smoothness, and savings in both labor and material are emphasized.

The solvent vapor tunnel, as a means of automatically removing clinging tear drops of paint from the low corners and edges of flow coated parts, is explained in principle and detail.

A few of the many questions answered in Mr. Zahn's book:

1) Can one-coat finishes be applied by the flow coat method?

2) How long should the work travel from flow coater to oven?

3) How many suppliers can supply flow coating equipment?

4) What is considered low pressure and high pressure in flow coating?

5) What is the normal efficiency of a flow coater compared to other methods?

6) Are special industrial paints necessary for the flow coat process?

7) How to arrive at proper solvent selection for flow coat paints.

8) Is high solvent loss necessary with the flow coat process?

9) What conveyor chain speeds can be used with flow coating?

(Continued on page 122)

Are you considering

FLOW COATING

your product ?

Rely on Reliance

...if so

Why not use our PILOT PLANT and formulating ability, to see if this method is "right" for your product? We would welcome the opportunity of helping you as we have others.

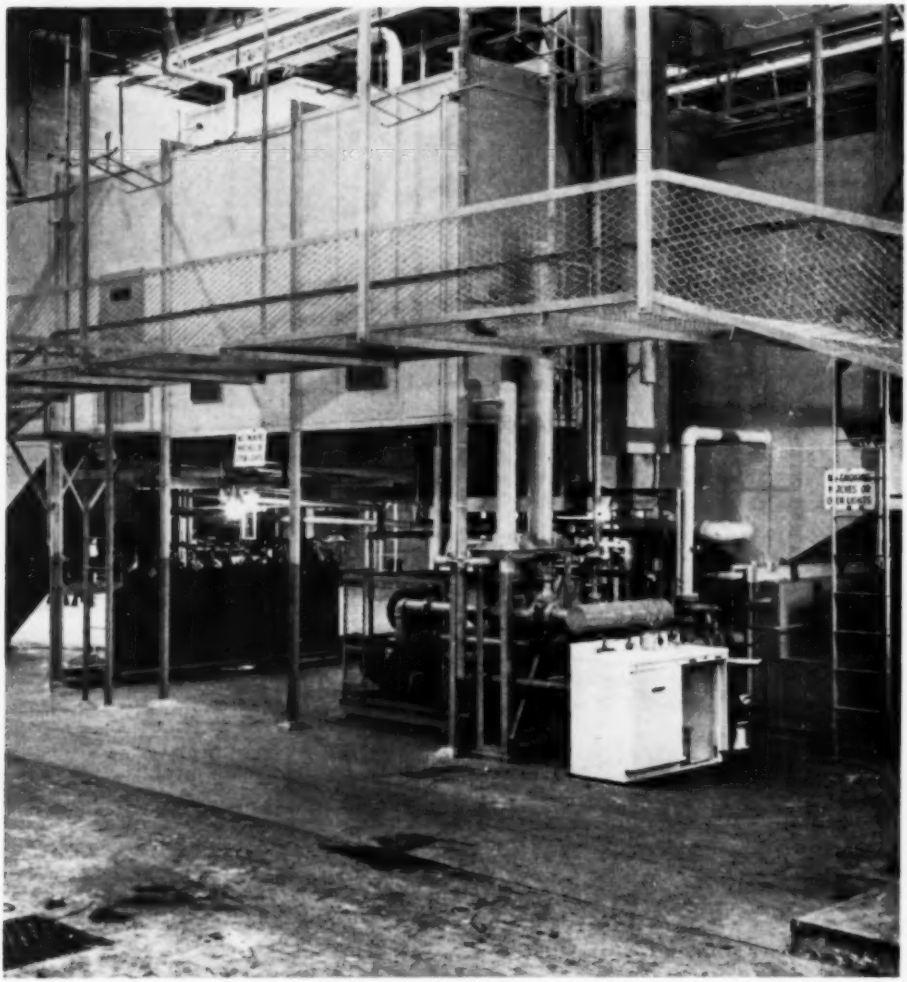
RELIANCE VARNISH COMPANY *Incorporated*

LOUISVILLE, KY.

Affiliated Factories in

CHICAGO, ILL. ASHEVILLE, N. C.

LOS ANGELES, CALIF. BRIDGEPORT, CONN.



the
SPRA-CON
flow coat unit

We manufacture standard flow coat units (as shown above), together with ovens, washers and all types of paint finishing systems.

THE NEW IMPROVED
SPRA-CON AUTOMATIC SPRAY APPLICATOR

The Spra-Con AUTOMATIC PAINT APPLICATOR, having 8 nozzles, will apply paint in hard-to-get places where it is impossible to cover the same object with 60 nozzles which most flow coat units have. With these few nozzles you can thereby realize a great solvent saving. This type of Automatic Paint Applicator has been installed in plants doing high-class finishing such as . .

PHILCO CORPORATION
HOTPOINT COMPANY
BENDIX HOME APPLIANCES
DEEPFREEZE APPLIANCES
ALTORFER BROS. COMPANY
WESTINGHOUSE ELECTRIC CORPORATION
INTERNATIONAL HARVESTER COMPANY
BEN HUR MFG. COMPANY
MARTIN STEEL PRODUCTS CO.

Spra-Con finishing equipment helps top manufacturers of refrigerators, appliances and other metal products, produce SMOOTHER, more salable finishes by providing equipment that employs *modern* application methods.

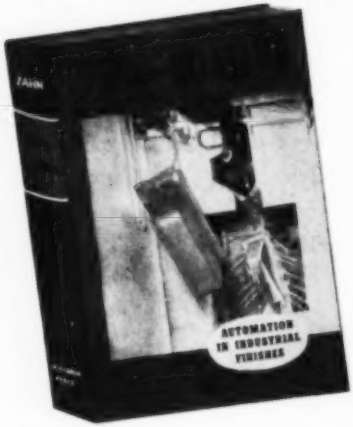
Let a Spra-Con engineer check your plant for possible increased production at lower cost.

The **SPRA-CON COMPANY**

3600 ELSTON AVENUE • CHICAGO 18, ILLINOIS

ENGINEERS AND MANUFACTURERS OF WASHERS, OVENS, AUTOMATIC PAINT APPLICATORS, CONVEYORS, AND EQUIPMENT FOR COMPLETE PAINT FINISHING SYSTEMS

FLOW COATING BOOK



Mr. Zahn, the author of "Flow Coating", says that any product which can be dipped or sprayed can be finished by the flow-coat method. His new book contains 296 pages 5¼x7¾-in.; 13 chapters.

The great range in new kinds of solvents now available, plus phenolic-base resin paints and vinyl type paints which have been so successful in the flow-coating method of application, presents endless possibilities for profit. The industrial user can now afford to pay a little more for better materials and profit by a higher quality product.

"Flow Coating" explains the various industrial painting methods such as: dipping, spraying, electrostatic, steam, roller coating, centrifugal, hand spraying, automatic dip and many others. Direct comparisons between flow coating and these methods are dealt with in detail.

Mr. E. A. Zahn has spent 25 years in research on industrial paints and application methods. He is the inventor of the Zahn Viscosity Cup, and has acted as consultant to many manufacturing concerns. In 1938 he received the Charles A. Coffin award for contributions made to the electrical industry. Mr. Zahn has been associated with General Electric for 25 years and is at present Organic Finishing Engineer at General Electric's Appliance Park, Louisville, Ky.

Price $6.50—Money Back Guarantee

INDUSTRIAL FINISHING

1142 N. Meridian St. Indianapolis 4, Ind.

10) What film thickness variable is normally encountered with flow coating?

11) What types of pumps are best adapted to paint handling in a flow coater?

12) How to evaluate paints and paint films for flow coating?

13) How automatic can a flow coating process be?

14) How does flow coating save on material and expense?

Copies of the book can be obtained through *Industrial Finishing*, at $6.50 per copy.

Metalphoto Process for Reproduction on Aluminum

A new 4-page brochure, showing a new concept of permanent photographic reproduction on anodized aluminum plates, has been released by the Metalphoto Corp., 2903 E. 79th St., Cleveland 4, Ohio.

The aluminum plates, 0.020 in thickness, are designed for the production of such items as name plates, dial and watch faces, wiring diagrams, instruction panels, instrument and slide rule scales, and other products where resistance to abrasives, temperatures up to 1000° F., and acids, salts and organic solvents is vital.

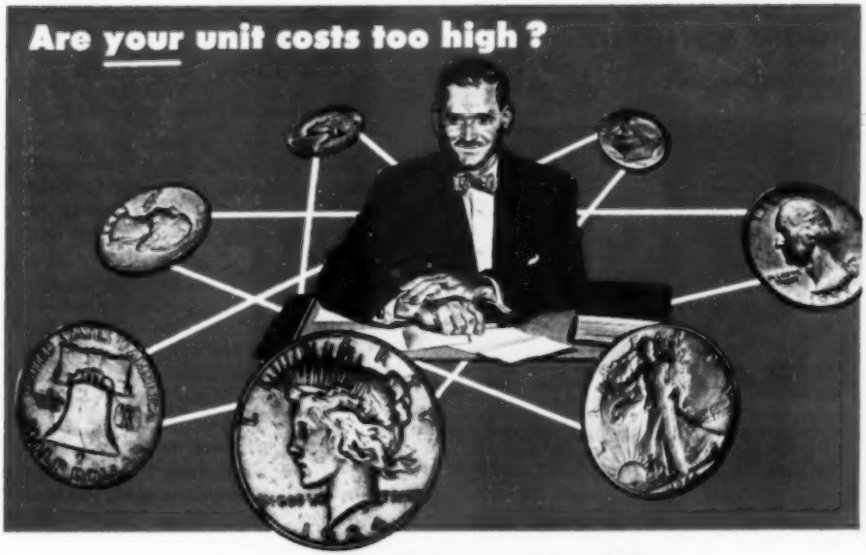
Free School of Spray Painting in Chicago, by Binks

The third class of the current Fall session of the Binks Mfg. Co.'s free School of Spray Painting in Chicago will be held November 8 to November 12.

All those connected with, or interested in, the industrial application of paint and coatings, are invited to attend. Although prior experience is not a requirement for attendance, most of those men who have attended have been connected with firms or industries that use spray painting equipment.

Because classes are kept to a maximum of 25 to insure personalized attention, it is important that application for attendance be made as far in advance as possible. This may be done by writing to Mr. E. F. Watts, Binks Mfg. Co., 3116 Carroll Ave., Chicago 12, Illinois. Reservations for hotel or other accommodations can be made at the same time.

The course is conducted by William Beacham, nationally-known paint chemist and spray painting authority, who is also Director of the Binks Research Department. The school is housed in special quarters and makes use of the latest audio-visual aids in the instruction.



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THE SPEE-FLO CO., 720 POLK, HOUSTON, TEXAS

Please send me information on your line of hot spray heaters best suited to our work. (Type of products being finished)_____
Application is conveyorized____ turntable____ mobile____ other (check one). Average volume of material per gun per hour_____
Please have representative call_____
Name_____
Company_____
Address_____
City_____ State_____

5274

C. A. Hamilton in Wisconsin for Grand Rapids Varnish Corp.

Mr. C. A. Hamilton has been appointed Sales and Service Representative, in Wisconsin, for the Grand Rapids Varnish Corp. of Grand Rapids, Mich.

For the past 24 years, with the exception of 3 years of service with the Navy during World War II, Mr. Hamilton has served the needs of users of industrial product finishes. He is equally versed in the problems attendant the finishing of wood and metal and he will serve both types of accounts in the area which he will cover. His many years of experience and his ability and knowledge of product finishing qualify him to serve users of industrial product finishes.

Zeno W. Wicks Becomes Gen. Mgr. Interchemical's Research

Dr. Zeno Wicks has been appointed general manager of Interchemical Corporation's central research laboratories in New York. Dr. Wicks will be responsible for the administration of the research effort at this location which, combined with the work of the various laboratories of the divisions, constitutes the technical attack of the Corporation in relation to industrial finishes, printing inks, textile colors and other chemical coatings.

Dr. Wicks is a graduate of Oberlin College and received his doctorate from the University of Illinois in 1944, the same year he joined Interchemical. He has held a number of posts within the Corporation, at the central research laboratories and several of the divisional laboratories and production units. His most recent position was manager of the commercial research department.

Hercules Synthetic Products

All the products commercially available from Synthetics Department, Hercules Powder Co., Wilmington, Dela., are conveniently listed, with characterizing data, in a new technical booklet, which is free.

Removing Trapped Cleaning Solution

(Continued from page 63)

are taken out of the rinsing bath, moisture left in recesses (provided the volume is not too great) will evaporate under heat of the parts themselves.

The possibility of processing small parts in revolving baskets should be carefully considered, too. Some leading manufacturers of metal mesh baskets have had extensive experience in developing end over end revolving types of mesh baskets. Often the use of an end over end revolving basket offers the best solution for a drainage problem when small metal parts are being processed. In the case of small cup-shaped parts, there is little chance that by the time they are slowly revolved through a full 360° circle, any appreciable quantity of liquid can remain trapped.

Large shells and similar products are often processed in a special conveyor-type washing, rinsing and rust-proofing machine. In these instances, the parts handled are large enough to make it worth while to give them individual attention as to their placement on a conveyor. Some machines of this type have two parallel side chains, one a bit higher than the other. The chains are connected by crossbars at such spacing as to support the products properly. Since the conveyor has this sidewise slant, and the cup-type parts are placed with their open ends at the low side, proper drainage is accomplished automatically.—*J. H.*

In old paint buildings, caulking around door and window frames will help keep dust out. Dust can ruin the best finish you put on a surface.

Random Comment on the Industrial Scene

(Continued from page 6)

The coating has good abrasion resistance; markings can be made directly on it; it will not support combustion when dry, and it can be stored indefinitely without undesirable effects. It is available for spray, dip or brush application.

* * *

Power Scrub Brush. Some products that have an intricate contour are difficult to clean up after wet sanding. Do you have such a problem?

A scrubbing machine is available, the frame of which remains stationary, straddling the conveyor belt that carries the product underneath a rotating cylinder brush. The brush is counterweighted which allows it to rise and fall with the contour of the parts as they pass underneath. Water from fixed spray nozzles directed at the brush, dissolves and washes away the sanding sludge.

* * *

Fire Resistant Clothes. These lightweight suits come in 10 models, and weigh less than 10-lbs. They are made of Fyre-Armor fabric, a patented process that fuses flame resistant fabrics to metallic layers, and then topped by specially treated aluminum foil.

These suits protect the wearer against flames and high radiant heat at temperatures up to 2500° F.

* * *

Save your feet! Walk on wood! This is the advice of one of the nation's leading chiropodists who warns that tired feet can lead to headaches, backaches, jangled nerves, tired muscles and a number of other physical disorders—even dislocated discs and spots before the eyes.

Dr. William J. Stickel, Executive Secretary of the National Association of Chiropodists, praises wood as a walking surface because of its resiliency.

"The extra bounce in wood," according to Dr. Stickel, "helps to cushion the shock transmitted to the skeletal system by walking."

CVC QUALITY
Custom Finishes for METAL
Engineered to solve your problems. Write for full facts.
Quality Custom Finishes Since 1865
CINCINNATI VARNISH CO.
CINCINNATI 12, OHIO

PAINT MIXER

MIRACLE 5 GALLON PAINT REJUVENATOR
All paint restored to original consistency without opening the can.
2 minutes per gal.
MIRACLE PAINT REJUVENATOR COMPANY
128 E. 10th St., St. Paul 1, Minn.

Serving THE SOUTHEAST
- LACQUERS
- SEALERS
- FILLERS
- TONERS
- GLAZES
- PIGMENTED WIPING STAINS
- NGR STAINS

Complete Technical Service At Your Disposal
SNYDER BROTHERS COMPANY
Manufacturers of Quality INDUSTRIAL LACQUERS
P. O. BOX 548 — TOCCOA, GEORGIA

Safe Cross-overs Across Conveyor Lines

SAFE PASSAGEWAYS should be provided across conveyorized production and assembly lines.. Dodging in between parts that are traveling along by conveyor is hazardous, both for the trespasser and the product. This is especially true in the paint department.

If cleaned metal parts are moving toward a painting station the finger marks of some one who touches one or more surfaces when he walks across the line—these direct finger contacts can prove just as detrimental to the surface to be coated as those of an operator handling the part bare handed, from the conveyor. That is why operators who must handle cleaned metal parts are obliged to wear cotton gloves.

If the part has been coated and is then moved aside by someone crossing the line, and not wearing gloves, that part is likely to be a reject. If the parts are leaving the bake oven by conveyor, the individual who even touches one when he walks across the line is likely to be burned.

Safe cross-overs that bridge over the conveyor line or pass under it, should be provided and used. Plant conditions will determine which type of cross-over is practical and safe. Where conveyor lines are long, and there is quite a distance between aisles, several cross-overs should be provided. These cross-overs should be well marked with a sign so that even a new employee will have

3 LBS.
11 OZS.
OF
PAINT
BUILD-UP

STRIPPED IN 2 MINUTES!

By
KOLENE
PROCESS

See the Kolene Process and Equipment in operation at Booth 1518, National Metal Show, Chicago, Nov. 1-5.

KOLENE CORPORATION
12890 WESTWOOD AVENUE
DETROIT 23, MICHIGAN
Originators and Suppliers of Kolene Chemical Processes and Equipment

no trouble locating it. If the cross-over is a bridge, it can be painted a distinctive color. If it is an underpass, the entrance can be painted the same color, and augmented by a colored light. Once these cross-overs have been installed a definite rule should be established: "Use a Safe Cross-over; No Dodging Across or Between Lines".

Money spent on safety is money well spent, and it pays off in dividends.—*S. Thompson.*

Regarding Electrostatic Patents

Ashdee Electrostatic Products, Inc., Homewood, Illinois, wrote to *Industrial Finishing* on September 14, as follows:

"We have received inquiries about the article on page 119 of August issue of *Industrial Finishing* headed 'Decree Favors Ransburg; Stops Infringer of Patents.' The wording of this article lends itself to more than one interpretation and we feel that you and our users are due this explanation from us, in the interests of true reporting.

"This article does not involve Ashdee Electrostatic Products, Inc., as it could convey by implication to certain readers. Our patent situation is clearly defined in each user's contract, and embraces full protection on the use of equipment as engineered and installed by us. Our company has never been sued or implicated in any suit by a competitor, nor has Ashdee ever been involved in any suit by a competitor against a manufacturer."

IDEAL TACK RAGS
FOR A PERFECT FINISH
Bulk or Bagged
IDEAL CHEMICAL COMPANY
1499 Dean Drive, South Euclid 21, Ohio

PAINT TESTING LABORATORY
Any test in F. S. TT-P-141b
PENNIMAN & BROWNE, INC.
Chemists-Engineers-Inspectors
341 St. Paul Place-Baltimore 2, Md.

James B. Day Died Sept. 14

Mr. James B. Day, 82, passed away Tuesday, September 14, 1954, following a long illness.

Mr. Day was Chairman of the Board of James B. Day & Co., which he founded in 1906. He was very active and well known in the paint, varnish and lacquer industry.

Black Lacquer "Pyroxcote" by Pyroxylin Products, Inc.

Pyroxylin Products, Inc., of Chicago has introduced a black lacquer of considerable interest to manufacturers of instruments. Called Pyroxcote 5606, the product gives maximum blackness at grazing incident angles. In addition, the lacquer handles in the conventional way and can be applied by spray, brush or machine coating.

CLASSIFIED ADVERTISING

The rate on ads appearing in this department is $1.00 per line of 6-pt. light face type, per insertion. Minimum charge, $5.00. Ads set in 8-pt. extra bold face type cost $2.00 per line, per insertion.

POSITION WANTED.

Coatings Chemist, Ph.D., Ch.E. Age 35. Married. 7 years broad experience as Technical Director and Chief Chemist in research, development and production of industrial coatings. Synthetic enamels, wrinkle finishes, wood and metal lacquers, stains, adhesives and solvents. Desires responsible technical supervisory position. Address IF-257, care Industrial Finishing.

CAN YOU WRITE?

If you can write a letter or simple report on using, servicing or selling finishing materials or equipment, we have an interesting proposition for you. Address IF-234, care Industrial Finishing.

MANAGER WANTED.

To manage re-organized department for sale of corrosion-proof materials. Good understanding of corrosion-proof materials of construction and sales experience in this field necessary. Location, Cleveland. Give full details. Address IF-258, care Industrial Finishing.

SALESMAN WANTED.

To represent Industrial Paint Company with some established accounts in Michigan. Should reside in Central Michigan. Address IF-262, care Industrial Finishing.

YOU CAN EARN

A nice sum of extra money purchasing paint overspray for us from Industrial users. Liberal commission and territory protection. Address IF-266, care Industrial Finishing.

SERVICEMAN WANTED.

An established wood and metal finish house has an opening on its service staff and is looking for an experienced wood furniture finisher. Some metal finish background would be helpful.

Please advise in first letter past ten year connections. Length of service at each, giving name of person we may address letter of recommendation.

Advise what starting salary would be interesting. Address IF-259, care Industrial Finishing.

WANTED.

Furniture lacquer formulator desired. Due to expanding demand for our products, it is necessary to add to our existing technical staff. SNYDER BROS. CO., P. O. Box 548, Toccoa, Georgia.

INDUSTRIAL PAINT SALESMAN.

Experienced industrial finishing salesman with following is offered an excellent opportunity with well-known manufacturer. The right man will be given exceptionally liberal terms. Our people know of this ad. Your detailed reply will be held in strict confidence. Address IF-260, care Industrial Finishing.

SALESMEN WANTED.

Established company specializing in making custom paint strippers for all types of organic coating removal from metals, plastics, etc. Profitable side line needed by your customers. Replies held in strictest confidence. Address IF-261, care Industrial Finishing.

COATING TECHNOLOGIST

To initiate, plan and carry out programs of applied research and development involving paint, lacquer and enamel processes and directed toward the industrial use as maintenance and protective coatings, based on vinyls, alkyds, epoxies and especially new coating resins. As Laboratory Manager of the Coatings Division, the position will require supervising projects of short and long range duration, technical service and advice to Sales and Production, trouble shooting—all from a laboratory standpoint. Candidates with adequate technical background will have unlimited possibilities to broaden their knowledge with a wide variety of established and new experimental coating resins. Complete laboratory facilities available with immediate plans for further expansion.

Salary to be commensurate with background, personality, experience and ability of the individual to diligently and aggressively carry out assigned tasks. Our primary search is for technical knowledge and ability to produce results as well as ability to assume responsibilities.

Submit complete details on technical background, industrial experience, personal data, photograph and salary required to locate in the northeastern Ohio area. Liberal employee benefits now in effect.

Address IF-256, care INDUSTRIAL FINISHING, Indianapolis 4, Ind.

BARGAINS IN FINISHING EQUIPMENT

DeVilbiss Degreasing and Washing Booths with Pump and CO2 Protective System.
R. C. Mahon Spray Booths with Blower, Pump, Filter, Turntable, Etc.
Barrett Centrifugal Enameler for Filwhirl or Dipspin Methods.
Binks and DeVilbiss Pressure and Mixing Tanks. Sizes 5 to 125 Gallons.
C. M. Hall Infra Red Oven, Degreasers, Blowers, Motors, Switches, etc.
Write for Particulars, or Inspect at

GENERAL TRADERS, INC. 2629 W. GRAND AVENUE, CHICAGO 12, ILLINOIS

SALESMEN WANTED.

Experienced salesmen selling lacquer and synthetic finishes. Good opportunity, open territory, good laboratory cooperation. Factory in Newark area. Apply in detail. Address IF-207, care Industrial Finishing.

SALES REPRESENTATIVE.

Experienced, to handle complete line of lacquer products of a quality lacquer manufacturer. Excellent opportunity for live wire. Our personnel know of this opening. Address IF-206, care Industrial Finishing.

DISTRIBUTOR OR REPRESENTATIVE WANTED.

Midwestern manufacturer of sealing compounds, coatings and specialties used by varied lines of industry, desires expansion and more thorough coverage through distributors or direct factory representatives. Address IF-264, care Industrial Finishing.

TWO OPENINGS IN INDUSTRIAL FINISHES SALES.

One for an experienced man to build on established sales in Pennsylvania, Ohio and Western New York. Another opening for a chemist interested in sales to handle new product development and customer service from our home office. We are moving into a completely new and larger plant after 25 years in the industrial and specialty coatings field. Apply to RAFFI AND SWANSON, INC., 311 Eastern Avenue, Chelsea 50, Massachusetts.

FOR SALE.

Eastern manufacturer has on hand 900-gallons of Green Zinc Chromate Primer meeting Specification AN-P-656 in five-gallon cans. Willing to sacrifice at $1.50 per gallon. Address IF-263, care Industrial Finishing.

DEGREASER FOR SALE.

Blakeslee D-65-P, 72"x36"x36" working space. Used less than 50 hours. $850. GORDON SMITH & CO., INC., Bowling Green, Ky.

SERVICES AVAILABLE.

Industrial Paint Manufacturer, long-established, well-rated, calling on Connecticut manufacturers would like to contact manufacturer with idea of selling, warehousing, distributing and servicing your product. Send inquiries to BRISTOL LACQUER & CHEMICAL CO., Forestville, Connecticut.

WANTED TO PURCHASE.

Three 6-ft. water wash booths to be used in handling 18-ft. material or as individual units. Equipment to be in first-class condition. Quote price and supply all necessary information. BUCHANAN LUMBER COMPANY, Cumberland, Md.

WANTED TO BUY.

Will buy your dirty Thinners and Solvents. Send samples or letters giving approximate contents and solids. Address THE JOHANN CO., 8547 S. Ashland Ave., Chicago, Ill.

FORD CUPS

THE VOL-U-METER COMPANY
Buffalo 16, N. Y.

Metalworking Manufacturers!
DEVINE AUTOMATIC BUFFING & POLISHING MACHINE
No Reasonable Offer Refused!

Urgent, immediate need for additional factory space necessitates quick sale of Devine 4 Stage Automatic Straight Line Polishing & Buffing Machine. Like new! Perfect condition. Equipped with 4 adjustable wheel heads (each with 20 H.P. motor). Extremely useful in the automatic finishing of many metal parts such as: bumpers, grills, typewriter bars, pliers, wrenches, hardware, etc. Original cost, over $18,000. Sacrifice! Photos available, or inspect at our premises. Address IF-265, care Industrial Finishing.

NEW BLACOSOLV®

DEGREASING SOLVENT

Proved in the field with Dramatic Results

* Ends Need for Constant Testing

Ideal for Aluminum—or Aluminum in Combination with other Metals

New BLACOSOLV degreasing solvent has been formulated specifically to meet the requirements demanded by increased use of aluminum, new alloys, and acid producing lubricants. Does not affect or stain any metals . . . will not break down . . . easily distilled from oil and soils.

Adds to the Life of Degreasing Machines

The high-stability of BLACOSOLV degreasing solvent is as gentle with the metals in your degreasing equipment as with the metals to be cleaned. This plus-economy factor is as important as the solvent efficiency, uninterrupted service and better production you will enjoy with the New BLACOSOLV.

Local Warehouse Stocks from Coast to Coast

Write for Complete Information

* *The only solvent with 22 years of "Know How" through a single manufacturing source.*

G. S. BLAKESLEE & CO.

1844 S. LARAMIE AVE., CHICAGO 50, ILL.

NEW YORK • LOS ANGELES

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We are proud of the Company we keep!

These leaders know the value of quality, and have given written permission to use their names as satisfied users of Bede Paint Heaters.

See the complete line of Bede quality products at the forthcoming National Metal Exposition—Nov. 1st through 5th at the International Amphitheatre—Chicago, Ill.

BOOTH No. 231

BEDE PRODUCTS CORPORATION

SUBSIDIARY

U. S. AUTOMATIC CORPORATION

1110 BROOKPARK ROAD, CLEVELAND 9, OHIO

ANOTHER CASE OF DETREX Service WITH A Saving AT WORK

CUTS METAL CLEANING COSTS 2/3

A sure and easy way to cut your cleaning costs is to follow the lead of Servel, Inc.—

In the production of their automatic ice maker refrigerators and air conditioning products, metal cleaning plays an important role in relation to both quality *and* costs. And, on those parts which are porcelain enameled, the importance of metal cleaning is especially critical. Here are the savings that resulted when Servel and the local Detrex field technician worked together on the subject.

To begin with, a Detrex cleaner specially developed for porcelain enamelers was recommended. Results on a lab basis looked good . . . production results were outstanding. On the basis of accurately compiled data, costs have dropped ⅔ . . . one million square feet of metal is cleaned at a total cleaner cost of less than $60.00. Quality is excellent.

Guaranteed results in your plant, too . . .

We guarantee to improve your cleaning operations, regardless of the parts being processed, the soil being removed, or the type of cleaning required! Only Detrex can make this offer because only Detrex makes *both* the chemicals and equipment for *all* types of cleaning . . . alkaline and emulsion washing, solvent degreasing, even cleaning with sound waves.*

You can get all the facts by dropping us a line. Do it now for lower costs.

**Detrex Soniclean® Process*

DETREX DETROIT

DETREX CORPORATION

Dept. HD-109, Box 501, Detroit 32, Mich.

a 3 cent investment

that will pay off

Here's how you can profit by investing a three cent stamp to mail the coupon below: By return mail you'll receive demonstration samples showing the difference a small amount of Nacromer added to your regular coating material* will make in your finish. You'll see how Nacromer creates new and completely different effects that will do wonders for your products. You'll learn, too, that Nacromer can be used on metal, wood, plastic, glass, paper . . . practically any material, and, that it requires no change in your present finishing method – brush, spray or dip. Best of all, you'll see that such a small quantity of Nacromer is required that the cost is negligible. But, why not see for yourself? Simply check the material you finish and mail the coupon today. Your 3 cent investment will pay off.

YOUR REGULAR COATING MATERIAL + NACROMER = A UNIQUE FINISH

**Nacromer is not suitable for use in pigmented enamels, paints, or high temperature bake-type synthetic resins containing formaldehyde. It is suitable for use over these coatings in a clear enamel or lacquer.*

the Mearl corporation

"World's Largest Producers of Pearl Essence"

153 Waverly Place • New York 14, N. Y.

Please send a demonstration sample of a Nacromer finish on

☐ wood ☐ metal ☐ plastic ☐ other

Name..... Title.....

Company.....

Address.....

City..... State.....